20040514

STIC Search Report
EIC 3700

STIC Database Tracking Number: 122013

TO:	From:
Andrea Ragonese Location: pk1 11e50 Art Unit: 3743 Case Serial Number: 10/654980	Jeanne Horrigan Location: EIC 3700 CP2-2C08 Phone: 305-5934 jeanne.horrigan@uspto.gov

Search Notes

Attached are the search results for the aerosol generation method, including prior art searches in foreign and international patent databases; and medical, pharmaceutical and general sci/tech/engineering non-patent literature databases.

I missed some items by inventors when I ran the inventor search, but they came out during the subject search. I marked with a yellow tag, everything by the inventors that is NOT in the inventor section. The green tags are for items that I thought were most relevant and were NOT by the inventors. However, I recommend that you review all of the results, especially because I did not always understand the descriptions given in abstracts and articles.

Also attached is a search feedback form. Completion of the form is voluntary. Your completing this form would help us improve our search services.

I hope the attached information is useful. Please feel free to contact me (phone 305-5934 or email jeanne.horrigan@uspto.gov) if you have any questions or need additional searching on this application.

Solomon, Terrance

From: Unknown@Unknown.com
Sent: Friday, May 14, 2004 8:16 AM
To: STIC-EIC3700
Subject: Generic form response

ResponseHeader=Commercial Database Search Request

AccessDB#= 122913

LogNumber= _____

Searcher= Jeanne Horrigan

SearcherPhone= 305-5934

SearcherBranch= _____

MyDate=Fri May 14 08:15:52 GMT-0400 (Eastern Daylight Time) 2004

submitto=STIC-EIC3700@uspto.gov

Name=Andrea Ragonese

Empno=77465

Phone=703-306-4055

MAY 14 2004

Artunit=3743

Office=PK1 11E50

Serialnum=10/654980

PatClass=128/200.14

Earliest=09/06/2002

Format1=paper

Searchtopic=Keywords:
Generating aerosol
Nebulizer/Nebuliser
Vaporizer
Volatilize liquid medicament
Analgesic, anginal preparation, anti-allergics, antibiotics, antihistamine, antitussives, bronchodilators, diurectic, anticholinergic, hormones, anti-flammatory agent

Comments=Only claims 19-34 need to be searched

Case is in IFW

send=SEND

STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact*:**

John Sims, EIC 3700 Team Leader
308-4836, CP2-2C08

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 3730*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC3700 CP2 2C08

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200430
File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)
File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	303	E3-E12 OR E14
S2	22	AU='MCRAE C F' OR AU='MCRAE D D'
S3	34	AU='COX K' OR AU='COX K A'
S4	23	AU='MCRAE D' OR AU='MCRAE D D'
S5	**2**	**S1 AND S3 AND S4**
S6	4755	AEROSOL? AND PARTICLE? ?
S7	4	(S1 OR S3 OR S4) AND S6
S8	**4**	**S7 NOT S5**

5/34/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016136995 **Image available**
WPI Acc No: 2004-294871/200427

Aerosol generating device e.g. hand-held inhaler has an aerosol confinement sleeve to control droplet size distribution

Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N)
Inventor: **COX K A** ; **GUPTA R** ; **MCRAE D D** ; NICHOLS W A
Number of Countries: 105 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200422243	A1	20040318	WO 2003US27730	A	20030905	200427 B
US 20040079368	A1	20040429	US 2002408291	P	20020906	200429
			US 2003654980	A	20030905	

Priority Applications (No Type Date): US 2002408291 P 20020906; US 2003654980 A 20030905
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200422243	A1	E	51	B05B-001/24	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20040079368 A1 A61M-016/00 Provisional application US 2002408291

Abstract (Basic): WO 200422243 A1

NOVELTY - An aerosol generating device (120) comprises: a housing (121) with a capillary sized flow passage (128); a heater to vaporize liquid passing through the passage; a source (122) of liquid to be volatilized; and an aerosol confinement sleeve (140) at the outer end of the passage. Droplet size distribution of the aerosol is controlled by (140).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for an aerosol generating method.

USE - The device is useful as a hand-held inhaler for delivering medicaments e.g. analgesics, anginal preparations, anti-allergics, antibiotics, antihistamines, antitussives, bronchodilators, diuretics, anticholinergics, hormones and anti-flammatory agents. Also useful for delivery of scents, paints and lubricants.

ADVANTAGE - The device provides aerosols with different size distributions and hence can be adapted for different needs of a patient. Also provides aerosol with controlled adjustability of the aerosol size.

DESCRIPTION OF DRAWING(S) - The figure show an aerosol generating device.

Device (120)
Housing (121)
Liquid source (122)
Flow passage (128)
Confinement sleeve. (140)
pp; 51 DwgNo 1/27

Derwent Class: B07; P34; P42; S05
International Patent Class (Main): A61M-016/00; B05B-001/24
International Patent Class (Additional): A61M-011/00; A61M-015/00; B05B-017/04; B05C-001/00

5/34/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
015124054 **Image available**
WPI Acc No: 2003-184577/200318

Instrument for programmable generation of volatilized material has flow passage, liquid supply, heater, controller for heater and liquid supply and monitoring arrangement to supply heater data to controller

Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N); BLAKE C E (BLAK-I); CAPPS M T (CAPP-I); COX K A (COXK-I); FELTER J L (FELT-I); GUPTA R (GUPT-I); KEELER D H (KEEL-I); MCRAE D D (MCRA-I)
Inventor: BLAKE C E; CAPPS M T; **COX K A** ; FELTER J L; **GUPTA R** ; KEELER D H; **MCRAE D D**
Number of Countries: 101 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200312565	A1	20030213	WO 2002US23994	A	20020729	200318 B
US 20030033055	A1	20030213	US 2001308608	P	20010731	200325
			US 2002206320	A	20020729	
EP 1412829	A1	20040428	EP 2002759199	A	20020729	200429
			WO 2002US23994	A	20020729	

Priority Applications (No Type Date): US 2001308608 P 20010731; US 2002206320 A 20020729
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200312565	A1	E	53	G05D-011/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

US 20030033055	A1		G05B-021/00	Provisional application US 2001308608
EP 1412829	A1	E	G05D-011/00	Based on patent WO 200312565

Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

Abstract (Basic): WO 200312565 A1

NOVELTY - The instrument includes at least one flow passage. A

liquid supply supplies liquid material to the flow passage. A heater heats the flow passage to a temperature sufficient to volatize material in liquid form in the flow passage such that the volatized material expands out of the open end of the flow passage. A controller controls operation of the heater and the liquid supply. A monitoring arrangement supplies heater performance data to the controller. The data is used by the controller to supply power to the heater or to cut off power to the heater to maintain it at a desired temperature range. A memory stores parameters associated with the instrument.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a method of operating an instrument.

USE - For generating aerosols and vapors through vitalization of a liquid.

ADVANTAGE - Provides programmable instrument for volatizing liquid material.

DESCRIPTION OF DRAWING(S) - The figure shows the instrument.

Flow passage. (223)

pp; 53 DwgNo 2/8

Derwent Class: T06

International Patent Class (Main): G05B-021/00; G05D-011/00

8/26,TI/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016124918

WPI Acc No: 2004-282794/200426

Propellant free liquid aerosol **formulation, useful for the treatment of asthma, comprises a high volatility carrier and a second component e.g. analgesic medicament**

8/34/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016111645 **Image available**

WPI Acc No: 2004-269521/200425

Aerosol **generating device useful as a hand held inhaler comprises a flow passage containing an outlet section that controls the exit velocity of the vapor and produces an** aerosol **with a desired** particle **size**

Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N)

Inventor: BROOKMAN D L; **COX K A** ; GROLLIMUND G E; MCREA D D; NGUYEN T T; NICHOLS W A; SMITH U

Number of Countries: 105 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200422242	A1	20040318	WO 2003US27729	A	20030905	200425	B

Priority Applications (No Type Date): US 2002408295 P 20020906

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200422242	A1	E	43	B05B-001/24	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB

GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 200422242 A1

NOVELTY - An **aerosol** -generating device comprises a liquid source, a flow passage and a heater for converting the liquid to vapor in heated portion of the flow passage. The flow passage, containing an outlet section (272) and outlet end (268), is connected to the liquid source. (272) Is configured to change and control the velocity of the vapor and thus control the **aerosol particle** size. The **aerosol particles** have a mass mean aerodynamic diameter of less than 2.5 microns. (272) Is made of material selected from metals, plastics, polymers, ceramics and/or glasses.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a method of generating an **aerosol** .

USE - The device is useful as a hand held inhaler.

ADVANTAGE - The device can provide immediate and consistent delivery of controlled amount of drug formulation to a patient, thereby not wasting lung capacity.

DESCRIPTION OF DRAWING(S) - The drawing shows a capillary passage including an outlet section in an enlarged cross-sectional view of the **aerosol** device.

Capillary passage (260)
Inlet (266)
Outlet (268)
First section (270)
Outlet section (272)
pp; 43 DwgNo 6/13

Derwent Class: B07; P34; P42
International Patent Class (Main): B05B-001/24
International Patent Class (Additional): A61M-011/00; B05B-017/04; B05C-001/00

8/34/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

015535495 **Image available**
WPI Acc No: 2003-597645/200356

Vapor driven aerosol **generator for treating respiratory ailments, has reservoir that supplies fluid to heater, which vaporizes fluid in passage between bonded layers of laminate**

Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N); COX K A (COXK-I); NICHOLS W A (NICH-I); REDDY S P (REDD-I); SHERWOOD T S (SHER-I); SOWERS S A (SOWE-I); SPRINKEL F M (SPRI-I)

Inventor: **COX K A** ; NICHOLS W A; REDDY S P; SHERWOOD T S; SOWERS S A; SPRINKEL M F; SPRINKEL F M

Number of Countries: 101 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030108342	A1	20030612	US 20013852	A	20011206	200356	B
WO 200349535	A1	20030619	WO 2002US38685	A	20021204	200356	
AU 2002362051	A1	20030623	AU 2002362051	A	20021204	200420	

Priority Applications (No Type Date): US 20013852 A 20011206

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030108342	A1		10	A61M-011/00	
WO 200349535	A1	E		A01G-013/06	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2002362051 A1 A01G-013/06 Based on patent WO 200349535

Abstract (Basic): US 20030108342 A1

NOVELTY - The generator (10) has a fluid reservoir (12), which supplies fluid to a passage (16) and a heater (24), which heats the fluid into a gaseous state. The passage is located between opposed layers of a laminate. A mandrel is bonded between opposed layers of laminate, made of copper sheets with ceramic layers on the outside such that the space left by the mandrel after removing the mandrel forms the fluid passage.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for making the **aerosol** generator.

USE - Used to generate medicated **aerosol** for treatment of respiratory ailments and in non-medical applications e.g. air freshener.

ADVANTAGE - The vaporized fluid ejected from the fluid passage condenses in ambient air to form **aerosol** , which has high flow rate while maintaining average mass median **particle** diameter.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic diagram of an **aerosol** generator.

Aerosol generator (10)
Fluid reservoir (12)
Passage (16)
Heater. (24)
pp; 10 DwgNo 1/4

Derwent Class: P13; P34; P42; Q74; S05
International Patent Class (Main): A01G-013/06; A61M-011/00
International Patent Class (Additional): A61M-015/00; A61M-015/000; A61M-016/00; A61M-016/000; B01D-001/00; B01D-001/000; B05B-001/24; B05B-001/244; F24F-006/00; F24F-006/000; F24F-006/10; F24F-006/100; H05B-003/00; H05B-003/000

8/34/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

014745555 **Image available**

WPI Acc No: 2002-566262/200260

Generating aerosol **involves passing solution containing solid component and liquid component, and volatilizing liquid component by passing solution through heated flow passage**

Patent Assignee: BYRON P R (BYRO-I); GUPTA R (GUPT-I); HINDLE M (HIND-I); CHRYSALIS TECHNOLOGIES INC (CHRY-N)

Inventor: BYRON P R; **GUPTA R** ; HINDLE M

Number of Countries: 101 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020078948	A1	20020627	US 2000560510	A	20000427	200260	B
			US 2001981739	A	20011019		
WO 200335790	A2	20030501	WO 2002US30871	A	20020930	200330	

Priority Applications (No Type Date): US 2001981739 A 20011019; US 2000560510 A 20000427
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 20020078948 A1 13 A61M-011/00 CIP of application US 2000560510
WO 200335790 A2 E C09K-000/00
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
Abstract (Basic): US 20020078948 A1

NOVELTY - Liquid component present in a solution of component (I) is volatilized by passing the solution through a heated flow passage (23). **Aerosol** distributed with **particles** of (I), of preset **particle** size is produced. Solution of (I) is prepared such that amount of (I) in the solution is sufficient to achieve predetermined **particle** size distribution of (I) in **aerosol** .

DETAILED DESCRIPTION - Liquid component present in a solution of component (I) is volatilized by passing the solution through a heated flow passage. **Aerosol** distributed with **particles** of component (I), of preset **particle** size is produced. The solution passed through a flow passage is heated to a temperature sufficient to volatilize liquid component. The liquid passage comprises an outlet through which component (I) and the volatilized liquid component flow. The solution of component (I) is prepared such that the amount of component (I) is sufficient to achieve predetermined **particle** size distribution of component (I) in **aerosol** .

An INDEPENDENT CLAIM is included for method for controlling **particle** size distribution of **aerosol** .

USE - For generating **aerosol** used to administer medicament into lungs of animals or human, used to treat respiratory ailments such as asthma, emphysema, chronic obstructive airway disease, bronchitis and cystic fibrosis.

ADVANTAGE - **Aerosol** comprising predetermined and/or monodispersed **particle** size distribution of components is obtained. The mass medium **aerosol** diameter and/or degree of uniformity of component (I) present in the **aerosol** is increased, by reducing the amount of component (I) present in the solution. Solution containing liquid component having a high boiling point results in increased degree of uniformity of **particle** size distribution in the **aerosol** . **Aerosol** is generated intermittently on demand or continuously. The cross-sectional area of the flow passage of the **aerosol** generator is sufficiently small to enable efficient heat transfer rate to the solution.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic view of **aerosol** generator.

Flow passage (23)

pp; 13 DwgNo 1/4

Technology Focus:

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Method: The solution is prepared such that amount of component (I) is sufficient to achieve predetermined ratio of mass median **aerosol** diameter (MMAD) of component (I) **aerosol particles** to MMAD of liquid component **aerosol particles** . The solution is prepared such that amount of

component (I) is sufficient to achieve substantially mono-dispersed **particle**0 size distribution of component (I). The solution is formed by mixing component (I) in the form of solid **particles** and liquid component comprising the solvent. The volatilized liquid component and component (I) condense after mixing with ambient air to form an **aerosol** . The amount of component (I) present in the solution is effective to cause ratio of MMAD of component (I) to MMAD of liquid component **aerosol particles** to be at least 0.75 after forming laerosol . The MMAD of **aerosol particles** is 0.3-2 mum. The flow passage of capillary dimension permits volatilization of liquid component when the flow passage is heated.

Preferred Composition: The component (I) comprising a medicament suitable for treating respiratory ailments is budesonide. 0.5 weight% or less, preferably 0.1 weight% or less of component (I) is present in the solution. The liquid component is water, propylene glycol, ethylene glycol, dipropylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol and/or oleyl alcohol. The **aerosol** is deposited into lungs of animal or human. Portion(s) of **aerosol** comprises component (I) and liquid component, or component (I). The geometric standard deviation of **particle** size distribution of component (I) at most 2.

Derwent Class: B01; B07; P34
International Patent Class (Main): A61M-011/00; C09K-000/00
International Patent Class (Additional): A61M-015/00; A61M-016/10

File 348:EUROPEAN PATENTS 1978-2004/May W01
File 349:PCT FULLTEXT 1979-2002/UB=20040506,UT=20040429

Set	Items	Description
S1	27	E3-E5
S2	9	AU='MCRAE DOUGLAS D'
S3	20	AU='COX KENNETH A'
S4	**3**	**S1 AND S2 AND S3 [duplicates]**
S5	21154	AEROSOL? AND PARTICLE?
S6	**9**	**(S1:S3 AND S5) NOT S4**

6/3,AB/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
01101904
LIQUID AEROSOL **FORMULATIONS AND** AEROSOL **GENERATING DEVICES AND METHODS FOR GENERATING** AEROSOLS
FORMULATIONS LIQUIDES D' AEROSOL **, GENERATEURS** AEROSOLS **ET PROCEDES DE GENERATION D'** AEROSOLS
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
NGUYEN Tung T, 1135 Huguenot Trail, Midlothian, VA 23113, US, US (Residence), US (Nationality), (Designated only for: US)
IRVING Christopher L, 14600 Rockyrun Road, Chesterfield, VA 23832, US, US (Residence), US (Nationality), (Designated only for: US)
COX Kenneth A , 12506 Misty Lake Court, Midlothian, VA 22313, US, US (Residence), US (Nationality), (Designated only for: US)
MCRAE Douglas D , 8101 Courthouse Road, Chesterfield, VA 23832, US, US (Residence), US (Nationality), (Designated only for: US)
NICHOLS Walter A, 9608 Summercliff Court, Chesterfield, VA 23832, US, US (Residence), US (Nationality), (Designated only for: US
Legal Representative:
SKIFF Peter K (agent), BURNS, DOANE, SWECKER & MATHIS, L.L.P., P.O. BOX 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200422128 A2 20040318 (WO 0422128)
Application: WO 2003US27473 20030904 (PCT/WO US03027473)
Priority Application: US 2002408280 20020906; US 2003444677 20030204
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 12724
English Abstract
Liquid **aerosol** formulations for generating **aerosols** include at least one high volatility carrier and a second component. In some embodiments,

the liquid **aerosol** formulation is propellant free. An **aerosol** generating device generates an **aerosol** by passing liquid **aerosol** formulation through a flow passage heated to convert the liquid into a vapor, which is mixed with air to form an **aerosol** . In some embodiments, **particles** of the **aerosol** consist essentially of the second component. The **aerosol** generator can be incorporated in a hand held inhaler. The **aerosol** can be delivered to a targeted portion of the lung using the inhaler.

6/3,AB/5 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00998354
FLUID VAPORIZING DEVICE HAVING CONTROLLED TEMPERATURE PROFILE HEATER/CAPILLARY TUBE
DISPOSITIF DE VAPORISATION FLUIDIQUE COMPRENANT UN ELEMENT CHAUFFANT/TUBE CAPILLAIRE A PROFIL THERMIQUE CONTROLE
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality)
Inventor(s):
NICHOLS Walter A, 9608 Summercliff Court, Chesterfield, VA 23832, US,
COX Kenneth A , 12506 Misty Lake Court, Midlothian, VA 23114, US,
MCRAE Douglas D , 8101 Courthouse Road, Chesterfield, VA 23832, US,
NGUYEN Tung Tien, 1135 Huguenot Trail, Midlothian, VA 23113, US
Legal Representative:
SKIFF Peter K (et al) (agent), Burns, Doane, Swecke & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200328409 A1 20030403 (WO 0328409)
Application: WO 2002US28703 20020910 (PCT/WO US0228703)
Priority Application: US 2001957026 20010921
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 4821
English Abstract
A fluid vaporizing device (10) includes a capillary tube (20) made from an electrically conductive material, an upstream electrode (32) and a downstream electrode (34) connected to the tube (20). The downstream electrode (34) is provided with an electrical resistivity sufficient to cause heating of the downstream electrode during operation to approximately the same temperature as the tube at the point of connection. A source of material (12) to be volatilized is provided to the tube at the feed section (22), into the heated section (24) and is vaporized, and then exits from the tube through the tip (29). The temperature profile of the tube along the heated section (24) is controlled by varying parameters to substantially eliminate any effect of the downstream electrode (34) as a heat sink. These parameters may

include the electrical resistivity of the downstream electrode (34), its cross-sectional area and its length.

6/3,AB/6 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
00997812
DUAL CAPILLARY FLUID VAPORIZING DEVICE
DISPOSITIF DE VAPORISATION DE FLUIDE A CAPILLAIRE DOUBLE
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
NICHOLS Walter A, 9608 Summercliff Court, Chesterfield, VA 23832, US, US (Residence), US (Nationality), (Designated only for: US)
COX Kenneth A , 12506 Misty Lake Court, Midlothian, VA 23114, US, US (Residence), US (Nationality), (Designated only for: US)
NGUYEN Tung T, 1135 Huguenot Trail, Midlothian, VA 23113, US, US (Residence), US (Nationality), (Designated only for: US
Legal Representative:
SKIFF Peter K (agent), Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200327779 A2-A3 20030403 (WO 0327779)
Application: WO 2002US29413 20020918 (PCT/WO US0229413)
Priority Application: US 2001956966 20010921
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 4403
English Abstract
A fluid vaporizing device (10) useful for vaporizing fluid into an **aerosol** and includes first and second capillary tubes (20,30) connected electrically in series by providing separate electrodes (50, 52) at the inlet ends (20a, 30a) of each capillary tube (20,30), and connecting the outlet ends (20b, 30b) of the capillary tubes (20,30) by an electrical connection (54) that connects the outlet ends (20b,30b) both electrically and thermally. The capillary tubes (20, 30) are heated by the flow of electricity therethrough, and liquid flowing through the tubes (20,30) is vaporized. The outlet ends (20b, 30b) of the capillary tubes (20, 30) are easily maintained at a temperature for optimizing **aerosol** generation since there is minimal heat loss through the connection (54) connecting the outlet ends (20, 30b).

6/3,AB/7 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
00917734

AEROSOL **GENERATOR HAVING HEATER IN MULTILAYERED COMPOSITE AND METHOD OF USE THEREOF**
GENERATEUR D' AEROSOLS **EQUIPE DE RECHAUFFEURS EN COMPOSITE MULTICOUCHE ET MODE D'UTILISATION**
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality)
Inventor(s):
SPRINKEL F Murphy Jr, 11017 Cedar Lane, Glen Allen, VA 23059, US,
NICHOLS Walter A, 9608 Summercliff Court, Chesterfield, VA 23832, US,
COX Kenneth A , 12506 Misty Lake Court, Midlothian, VA 22313, US,
SHERWOOD Timothy S, 11506 Courthouse Acres Drive, Midlothian, VA 23113, US,
SOWERS Scott A, 4509 Jonlow Circle, Richmond, VA 23234, US,
WASHINGTON Zelita R, 7700 Cherokee Road, Richmond, VA 23225, US,
REDDY Sirisha, 3323 Hastings Road, Petersburg, VA 23805, US
Legal Representative:
SKIFF Peter K (et al) (agent), Burns, Doane, Swecker & Mathis, P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200251469 A2-A3 20020704 (WO 0251469)
Application: WO 2001US45759 20011207 (PCT/WO US0145759)
Priority Application: US 2000742320 20001222
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 5262
English Abstract
An **aerosol** generator (100) includes a fluid passage (130) arranged between a first (110) and a second layer (120) wherein the first (110) and second (120) layers at least partially define the fluid passage (130). A liquid supply (150) is arranged to provide a fluid in liquid phase to the fluid passage (130). The **aerosol** generator (130) also includes a heater (180) arranged to volatilize the fluid in the fluid passage (130). An outlet (140) of the **aerosol** generator (100) is arranged to receive the volatilized fluid and direct the volatilized fluid out of the fluid passage (130). The **aerosol** generator (100) can be used to generate **aerosols** containing medicated materials.

6/3,AB/8 (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00917733
AEROSOL **GENERATOR HAVING MULTIPLE HEATING ZONES AND METHODS OF USE THEREOF**
GENERATEUR D' AEROSOLS **A PLUSIEURS ZONES CHAUFFANTES ET MODE D'UTILISATION**
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality)

Inventor(s):
COX Kenneth A , 12506 Misty Lake Court, Midlothian, VA 22313, US,
NICHOLS Walter, 9608 Summercliff Court, Chersterfield, VA 23832, US,
SPRINKEL F Murphy Jr, 11017 Cedar Lane, Glen Allen, VA 23059, US,
MCRAE Douglas D , 8101 Courthouse Road, Chesterfield, VA 23832, US,
SWEENEY William R, 8242 Marwood Drive, Richmond, VA 23235, US
Legal Representative:
SKIFF Peter K (agent), Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200251468 A2-A3 20020704 (WO 0251468)
Application: WO 2001US45257 20011203 (PCT/WO US0145257)
Priority Application: US 2000742322 20001222
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 7608
English Abstract
A temperature and flow rate controlled capillary **aerosol** generator includes two heating zones (Z1, Z2) optionally separated by a region in which a pressure drop is induced. Power is metered or applied to the downstream, second zone (Z2) to achieve a target resistance, and a target temperature, while power is metered or applied to the upstream, first zone (Z1) to achieve a target mass flow rate exiting the second zone. A target temperature is achieved in the second zone to generate an **aerosol** from the liquid flowing through the generator at the desired mass flow rate.

6/3,AB/9 (Item 9 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00558225
AEROSOL **GENERATOR AND METHODS OF MAKING AND USING AN** AEROSOL **GENERATOR ATOMISEUR ET PROCEDES DE FABRICATION ET D'UTILISATION D'UN ATOMISEUR**
Patent Applicant/Assignee:
PHILIP MORRIS PRODUCTS INC,
Inventor(s):
COX Kenneth A ,
BEANE Timothy Paul,
SWEENEY William R,
NICHOLS Walter A,
SPRINKEL F Murphy Jr
Patent and Priority Information (Country, Number, Date):
Patent: WO 200021598 A1 20000420 (WO 0021598)
Application: WO 99US24080 19991014 (PCT/WO US9924080)
Priority Application: US 98172023 19981014
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ

TM TR TT TZ UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ
BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT
SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 14662
English Abstract

An **aerosol** generator (21) includes a flow passage (27) having an inlet (29), and an outlet (31); a heater (33) arranged relative to the flow passage for heating the flow passage, a source of material (37) to be volatilized in communication with the inlet of the flow passage; a valve (35) to open, and close communication between the source of material; the inlet of the flow passage; and a pressurization arrangement (39) for causing material in the source of material to be introduced into the flow passage when the valve is in an open position. The **aerosol** generator further includes a source of power (41) for operating the heater, the valve; and a control device (43) for controlling supply of power from the source of power to the heater, and the valve. A metering device (463) in an inhaler (401) includes a pressurized source of medicated fluid (408), and a metering chamber (407) configured to deliver a predetermined volume of fluid to a heated flow passage (409) in the inhaler.

```
File 155:MEDLINE(R) 1966-2004/May W2
File   5:Biosis Previews(R) 1969-2004/May W2
File  73:EMBASE 1974-2004/May W2
File  34:SciSearch(R) Cited Ref Sci 1990-2004/May W2
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
Set     Items   Description
S1       3507   AU='GUPTA R'
S2        890   AU='GUPTA R.'
S3         42   AU='GUPTA RAJIV':AU='GUPTA RAJIVE'
S4         61   AU='MCRAE D A' OR AU='MCRAE D D' OR AU='MCRAE D.' OR AU='M-
              CRAE DD' OR AU='MCRAE DOUG' OR AU='MCRAE DOUGLAS'
S5        799   AU='COX K' OR AU='COX K A' OR AU='COX K.' OR AU='COX K.A.'
S6         61   AU='COX KA'
S7         16   AU='COX KENNETH' OR AU='COX KENNETH A'
S8          9   AU='COX KEN'
S9          1   S1:S3 AND S4 AND S5:S8
S10      5382   S1:S8 NOT S9
S11     32898   AEROSOL? AND PARTICLE?
S12         8   S10 AND S11
S13         3   RD (unique items)

 9/7/1     (Item 1 from file: 34)
DIALOG(R)File  34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
11580544   Genuine Article#: 673DM   Number of References: 32
Title: Investigation of a novel condensation aerosol generator: Solute and
    solvent effects
Author(s):  Gupta R ; Hindle M (REPRINT) ; Byron PR;  Cox KA ;  McRae DD
Corporate Source: Virginia Commonwealth Univ,Dept Pharmaceut, Aerosol Res
    Grp,Box 980533/Richmond//VA/23298 (REPRINT); Virginia Commonwealth
    Univ,Dept Pharmaceut, Aerosol Res Grp,Richmond//VA/23298; Chrysalis
    Technol Inc,Richmond//VA/
Journal: AEROSOL SCIENCE AND TECHNOLOGY, 2003, V37, N8 (AUG), P672-681
ISSN: 0278-6826   Publication date: 20030800
Publisher: TAYLOR & FRANCIS INC, 325 CHESTNUT ST, SUITE 800, PHILADELPHIA,
    PA 19106 USA
Language: English   Document Type: ARTICLE
Abstract: Part I of this article presents results of an experimental study
    on gas-phase nucleation for three model solutes and their solvent,
    propylene glycol (PG), with variables being solute concentration and
    the nature of the solute substance. A single manifestation of an
    aerosol generator, which forms condensation aerosols by cooling of hot
    vapor issuing from an electrically heated, pumped capillary, is
    described and used for all experiments. The effects of solute
    concentration and solute type were studied for deoxycorticosterone
    (DOC), benzil (BZ), and phenyl salicylate (PhS). Suppression of
    homogeneous nucleation and occurrence of heterogeneous condensation of
    the solvent was observed at different solute concentrations for BZ,
    PhS, and DOC. The nature and concentration of the solute dissolved in
    the solvent was shown to determine the final particle size distribution
    of the condensed aerosol. In the case of the least volatile solute,
    DOC, solute aerosol and total aerosol size distributions were identical
    at low solute concentrations. A transitional concentration region then
    existed in which a bimodal solute aerosol was formed, followed at high
    concentrations by increasing separation of the solvent-dominated
    aerosol size distribution and that of the solute.
```

In Part II of this article, the effect of DOC dissolution in different solvents was studied at fixed solute concentration. The effects of six glycol solvents-i.e., PG, ethylene glycol (EG), dipropylene glycol (DPG), diethylene glycol (DEG), triethylene glycol (TEG), and tetraethylene glycol (TetEG)-and three nonglycol solvents-i.e., dimethyl sulfoxide (DMSO), formamide (FORM), and oleyl alcohol (OA)-were studied, as these affected the resultant aerosol sizes. Suppression of total aerosol mass median aerodynamic diameter (MMAD) was observed on dissolution of 0.5% w/w DOC in each solvent, although suppression occurred to different extents. It was shown that the boiling point or volatility of the solvent used to dissolve the less volatile DOC had an effect on the final particle size distribution of the condensed aerosol and whether the aerodynamic size distributions for the solute and the total aerosol were the same or different.

13/7/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2004 The Dialog Corp. All rts. reserv.
14181674 PMID: 9883943
A generic mixing system for achieving conditions suitable for single point representative effluent air sampling.
McFarland A R; Anand N K; Ortiz C A; **Gupta R** ; Chandra S; McManigle A P
Department of Mechanical Engineering, Texas A&M University, College Station, 77841, USA.
Health physics (UNITED STATES) Jan 1999, 76 (1) p17-26, ISSN 0017-9078 Journal Code: 2985093R
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
The U.S. EPA has approved Alternate Reference Methodologies for sampling radionuclide **aerosol particles** from stacks and ducts of U.S. DOE facilities. The approach allows use of single point sampling with shrouded probes from locations where both fluid momentum and contaminant concentration are well mixed across the flow cross section. For existing stacks and ducts that do not have locations where there is adequate mixing, we have developed a generic mixing system that will generate conditions suitable for single point sampling. The coefficients of variation of the velocity, tracer gas, and 10 microm aerodynamic diameter **aerosol particles** profiles are all less than 10%, which are well within the EPA limit of 20%. Mixing is affected neither by size of the system nor by flow rate, provided the flow is turbulent.
Record Date Created: 19990121
Record Date Completed: 19990121

13/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2004 The Dialog Corp. All rts. reserv.
11144822 PMID: 11205740
Physical characterization of large porous particles for inhalation.
Gupta R ; Byron P R
Pharmaceutical research (United States) Nov 2000, 17 (11) p1437-8, ISSN 0724-8741 Journal Code: 8406521
Comment on Pharm Res. 1999 Nov;16(11) 1735-42; Comment on PMID 10571280
Document type: Comment; Letter
Languages: ENGLISH

Main Citation Owner: NLM
Record type: Completed
Record Date Created: 20010202
Record Date Completed: 20010503

13/7/3 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

10997360 EMBASE No: 2001042785
Experimental study of aerosol **deposition in flow splitters with turbulent flow**
Gupta R. ; McFarland A.R.
A.R. McFarland, Aerosol Technology Laboratory, Department of Mechanical Engineering, Texas A and M University, College Station, TX 77843 United States
AUTHOR EMAIL: arm9136@acs.tamu.edu
Aerosol Science and Technology (AEROSOL SCI. TECHNOL.) (United States) 2001, 34/2 (216-226)
CODEN: ASTYD ISSN: 0278-6826
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 33
Seven flow splitters, which have one inlet and two outlet ports, were characterized in terms of **aerosol** penetration. Splitter A, which has an enlarged cylinder between the inlet and outlet ports, was designed for a flow rate of 57 L/min and allows 95% penetration of 10 mum AD **aerosol particles** . Splitter B, which is Y-shaped, was tested at inlet flow rates of 113 and 170 L/min for symmetric and asymmetric flow splitting between the two outlets. Splitters C-F, which are also Y-shaped but are more simple to construct than Splitter B, have total outlet flow areas equal to the inlet flow area and are similar except that their bifurcation angles range from 30degrees to 90degrees. Splitter G is similar to Splitter E except that it has equal diameters of the inlet and outlet tubes. Experiments were conducted with monodisperse **aerosols** with sizes from 5 to 20 mum aerodynamic diameter. Two correlations have been developed. One, for Splitters B-G, gives **aerosol** penetration as a function of Stokes number. The second, for Splitters C-F, gives **aerosol** penetration as a function of Stokes number and bifurcation angle. Test conditions on which the latter correlation is based include a range of Stokes numbers from 0.034 to 1.25, Reynolds numbers from 2600 to 13,600, and bifurcation angles of 30degrees, 45degrees, 60degrees, and 90degrees. The splitter design that we prefer is that embodied in Splitters C-F, which can be modeled with either correlation.

```
File 155:MEDLINE(R) 1966-2004/May W2
File   5:Biosis Previews(R) 1969-2004/May W2
File  73:EMBASE 1974-2004/May W2
File  34:SciSearch(R) Cited Ref Sci 1990-2004/May W2
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
File 144:Pascal 1973-2004/May W2
File   2:INSPEC 1969-2004/May W1
File   6:NTIS 1964-2004/May W3
File   8:Ei Compendex(R) 1970-2004/May W2
File  94:JICST-EPlus 1985-2004/Apr W3
File  95:TEME-Technology & Management 1989-2004/May W1
File  99:Wilson Appl. Sci & Tech Abs 1983-2004/Apr
File  65:Inside Conferences 1993-2004/May W2
File  35:Dissertation Abs Online 1861-2004/Apr
File  42:Pharmaceuticl News Idx 1974-2004/May W2
File 285:BioBusiness(R) 1985-1998/Aug W1
File  71:ELSEVIER BIOBASE 1994-2004/May W1
File  74:Int.Pharm.Abs 1970-2004/Apr B2
Set     Items   Description
S1      32048   (PRODUC???? OR GENERAT???)(1N)AEROSOL? ? OR AEROSOLIZ? OR -
             AEROSOLIS?
S2     489079   (FLOW OR FLUID OR LIQUID)()PASSAGE? OR CAPILLARY OR CAPILL-
             ARIES
S3    2818512   HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4     623958   SLEEVE? OR SHEATH OR SHEATHS OR CHAMBER? ?
S5    4761722   DETACH???? OR REMOV???? OR ATTACH???? OR RELEAS???? OR APP-
             END? OR DISENGAG?????
S6     508738   MEDICAMENT? ? OR MEDICAT?
S7   10802272   MEDICAL OR MEDICIN??
S8   10440799   DRUG? ?
S9     730961   PHARMACEUTICAL? ?
S10   1585299   ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR CHOLINERG-
             IC? ? OR INFLAMMATOR? OR BIOTIC? ? OR HISTAMINE? ? OR TUSSIVE?
              ?) OR ANTIALLERGIC? ? OR ANTIINFLAMMATOR??? OR ANTICHOLINERG-
             IC? ? OR ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSS...
S11   2200160   DIURETIC? ? OR BRONCHODILATOR? ? OR HORMONE? ?
S12      3208   S4(1N)S5
S13         0   S1 AND S2 AND S3 AND S12
S14         3   S1 AND S2 AND S3 AND S4
S15         3   RD (unique items)
S16    240144   ATOMIS? OR ATOMIZ? OR VOLATILIZ? OR VOLATILIS? OR VAPORIS?
             OR VAPORIZ? OR VAPOURIS? OR VAPOURIZ? OR NEBULIZ? OR NEBULIS?
             OR HUMIDIFI? OR INHALER? ?
S17         1   S2 AND S3 AND S12
S18         1   S17 NOT S14 [not relevant]
S19        76   (S16 AND S2 AND S3 AND S4) NOT (S14 OR S17)
S20         0   S12 AND S19
S21    123934   S16/TI,DE
S22        33   S19 AND S21
S23        20   RD (unique items)
S24        20   Sort S23/ALL/PY,A
S25        43   S19 NOT S22
S26         0   S25 AND S6
S27         3   S25 AND S7
S28         7   S25 AND S8
S29         0   S25 AND S9
```

S30	0	S25 AND S10
S31	0	S25 AND S11
S32	8	S27:S28
S33	**6**	**RD (unique items)**
S34	32	(S1 AND S2 AND S3) NOT (S14 OR S17 OR S19)
S35	3	S34 AND S6:S7
S36	15	S34 AND S8:S9
S37	1	S34 AND S10:S11
S38	16	S35:S37
S39	8	RD (unique items)
S40	**8**	**Sort S39/ALL/PY,A**
S41	16	S34 NOT S38
S42	**13**	**RD (unique items)**
S43	0	S42/2004
S44	188	S1/TI AND S3
S45	176	S44 NOT (S14 OR S17 OR S19 OR S34)
S46	4	S6 AND S45
S47	15	S7 AND S45
S48	18	S8 AND S45
S49	7	S9 AND S45
S50	0	S10 AND S45
S51	2	S11 AND S45
S52	31	S46:S51
S53	21	RD (unique items)
S54	**21**	**Sort S53/ALL/PY,A**

15/7/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2004 BIOSIS. All rts. reserv.
0014180587 BIOSIS NO.: 200300139306
Aerosol generator **and methods of making and using an** aerosol generator
AUTHOR: Cox Kenneth A (Reprint); Beane Timothy Paul; Sweeney William R; Nichols Walter A; Sprinkel F Murphy
AUTHOR ADDRESS: Midlothian, VA, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1267 (2): Feb. 11, 2003 2003
MEDIUM: e-file
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: An **aerosol generator** includes a **flow passage** having an inlet and an outlet, a **heater** arranged relative to the **flow passage** for **heating** the **flow passage** , a source of material to be volatilized in communication with the inlet of the **flow passage** , a valve to open and close communication between the source of material and the inlet of the **flow passage** , and a pressurization arrangement for causing material in the source of material to be introduced into the **flow passage** when the valve is in an open position. The **aerosol generator** further includes a source of power for operating the **heater** and the valve, and a control device for controlling supply of power from the source of power to the **heater** and the valve. A metering device in an inhaler includes a pressurized source of medicated fluid and a metering **chamber** configured to deliver a predetermined volume of fluid to a **heated flow passage** in the inhaler. The metering **chamber** can be part of a rotary valve having a bore and a displacement member

moveable within the bore from a first position where the fluid is loaded into the bore to a second position where the predetermined volume is ejected out of the bore. Another metering **chamber** has an elastic portion of a delivery passage in fluid communication with the pressurized source of liquid and the elastic portion of the delivery passage is deformed to eject the predetermined volume.

15/7/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
05002913 Genuine Article#: UY744 Number of References: 31
Title: NEBULIZATION AND ANALYSIS CHARACTERISTICS OF A PARTICLE-BEAM HOLLOW-CATHODE GLOW-DISCHARGE ATOMIC-EMISSION SPECTROMETRY SYSTEM
Author(s): YOU JZ; DEPALMA PA; MARCUS RK
Corporate Source: CLEMSON UNIV,HOWARD L HUNTER CHEM LAB,DEPT CHEM/CLEMSON//SC/29634; CLEMSON UNIV,HOWARD L HUNTER CHEM LAB,DEPT CHEM/CLEMSON//SC/29634
Journal: JOURNAL OF ANALYTICAL ATOMIC SPECTROMETRY, 1996, V11, N7 (JUL), P 483-490
ISSN: 0267-9477
Language: ENGLISH Document Type: ARTICLE
Abstract: A detailed evaluation of the nebulization characteristics of a particle beam/hollow cathode glow discharge atomic emission spectrometry system is described, The optimization of sample introduction and particle beam interface operation was further evaluated for applications in elemental analysis for a number of transition metals, A high efficiency thermoconcentric nebulizer, coupled to a particle beam LC-MS interface, was employed to introduce analyte particles into a **heated** hollow cathode glow discharge source in either flow injection or continuous flow mode, The measurement of pressure and temperature in the desolvation **chamber** , along with the addition of a helium supplement gas, provides an insight into the sample/particle transport mechanism, The effects of **capillary** size (inner diameter) and solvent composition (methanol-water volume ratio) at various liquid Bow rates were studied to evaluate optimum sample introduction conditions, Calibration graphs of Cu, Pb, Fe and Mg in the range 50 ppb-10 ppm show promising linearity under optimized conditions, The variability of multiple injections at a single concentration is less than 15% RSD over this concentration range, The limits of detection for Cu, Pb, Fe and Mg are 12, 25, 20 and 15 ppb, respectively, for 200 mu l injection volumes.

15/7/3 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
02099175 Genuine Article#: KA746 Number of References: 63
Title: THERMOSPRAY SAMPLE INTRODUCTION TO ATOMIC SPECTROMETRY
Author(s): KOROPCHAK JA; VEBER M
Corporate Source: SO ILLINOIS UNIV,DEPT CHEM & BIOCHEM/CARBONDALE//IL/62901 ; EDVARD KARDELJ UNIV,DEPT CHEM/YU-61000 LJUBLJANA//YUGOSLAVIA/
Journal: CRITICAL REVIEWS IN ANALYTICAL CHEMISTRY, 1992, V23, N3, P113-141
ISSN: 1040-8347
Language: ENGLISH Document Type: REVIEW
Abstract: Thermospray **aerosols** are **generated** by forcing a liquid sample through a **capillary** tube that is **heated** to partially vaporize the solvent, resulting in a blast of vapor that converts the remaining

liquid to droplets. The droplet size character of thermospray aerosols can be electrically varied by changing the temperature and degree of solvent vaporization of the liquid stream. The primary droplets produced by thermospray under optimal conditions are smaller on average then those produced by pneumatic nebulizers, particularly of the types used for inductively coupled plasmas (ICPs). Solvent vaporization is enhanced for smaller particles and higher temperatures, with both aspects leading to faster size reduction due to solvent evaporation than would occur with pneumatic sample introduction at room temperature. As smaller droplets are more efficiently transported through sample introduction systems, the use of thermospray **aerosol generation** provides higher analyte transport, higher sensitivity, and lower LODs than pneumatic sample introduction with most atomic spectrometric detectors. Factors that affect the extent of improvement are the operating temperature of die thermospray vaporizer, the temperature of the spray **chamber** , the presence or absence of a desolvation system, the diameter of the **capillary** , and the liquid sample flow rate. The absence of desolvation results in degradation of excitation conditions within ICPs, and in smaller improvements in analytical peformance with ICP atomic emission spectrometry (ICP-AES). Smaller **capillary** exit diameters provide better performance. Specific LOD improvements with thermospray sample introduction compared to pneumatic sample introduction vary, but typically are a factor of 15 to 25 times lower when desolvation is used with thermospray, and when both systems operate at comparable flow rates. Matrix effects are generally higher with thermospray sample introduction than with pneumatic sample introduction, but are comparable to those reported for ultrasonic nebulization. Thermospray systems have been shown to provide LODs an order of magnitude lower than that obtained with pneumatic sample introduction, even in die presence of high dissolved solids, such as 3000 mug/ml Ca. Thermospray **capillaries** as small as 25 to 50 mum can operate effectively at optimal conditions with high dissolved solids content samples, without problems of **capillary** clogging.

Thermospray sample introduction has most often been applied to ICP-AES, but also has been studied with ICP-mass spectrometry, flame atomic absorption, and even graphite furnace atomic absorption. The principle applications of thermospray sample introduction to ICP-AES to date have been to environmental analyses, and for detection of discrete samples resulting from flow injection and liquid chromatography. For discrete sampling methods, the advantages are the low extra-column volumes of thermospray systems, which minimize dispersion, and improved sensitivity, which counteracts the effects of unaviodable dispersion, particularly during chromatographic separations.

24/6/2 (Item 2 from file: 144)
02163581 PASCAL No.: 78-0214991
EN RUSSE.
(FLUX THERMIQUES CRITIQUES LORS DE LA VAPORISATION **DU SODIUM A PARTIR DE STRUCTURES A POROSITE CAPILLAIRE DE CALODUCS ET DE CHAMBRES DE** VAPORISATION)
(CRITICAL HEAT **FLUXES BY SODIUM** VAPORIZING **FROM POROUS** CAPILLARY **STRUCTURES OF** HEAT **PIPES AND** VAPORIZING CHAMBERS)
1977

24/6/4 (Item 4 from file: 6)
1342552 NTIS Accession Number: AD-D013 338/9

Electrically Heated **Non-Toxic Smoke Generator**
(Paten)
Filed 4 Apr 80 patented 14 Sep 82

24/6/5 (Item 5 from file: 6)
1138874 NTIS Accession Number: DE84702512
Vaporization Heat **Exchange for Concave Liquid Surfaces**
1983

24/6/7 (Item 7 from file: 5)
0007334037 BIOSIS NO.: 199090118516
PTV VAPOR OVERFLOW PRINCIPLES OF A SOLVENT EVAPORATION TECHNIQUE FOR INTRODUCING LARGE VOLUMES IN CAPILLARY **GC**
1990

24/6/15 (Item 15 from file: 34)
07632156 Genuine Article#: 189WA Number of References: 32
Title: Sample nebulization **for minimization of transition metal interferences with selenium hydride generation ICP-AES** (ABSTRACT AVAILABLE)
Publication date: 19990315

24/7/3 (Item 3 from file: 434)
DIALOG(R)File 434:SciSearch(R) Cited Ref Sci
(c) 1998 Inst for Sci Info. All rts. reserv.
02042635 Genuine Article#: EZ970 Number of References: 7
Title: CRITICAL HEAT **FLUXES WITH** VAPORIZATION **OF SODIUM FROM** CAPILLARY **-POROUS STRUCTURES OF** HEAT **TUBES AND VAPOR** CHAMBERS
Author(s): SUBBOTIN VI; IVANOVSKII MN; KUDRYAVTSEV AP; PROSVETOV VV; SOROKIN VP; SOROKIN DN
Corporate Source: OBNINSK PHYS & POWER ENGN INST/OBNINSK//USSR/
Journal: HIGH TEMPERATURE-USSR, 1977, V15, N5, P853-857
Language: ENGLISH Document Type: ARTICLE

24/7/8 (Item 8 from file: 144)
DIALOG(R)File 144:Pascal
(c) 2004 INIST/CNRS. All rts. reserv.
09914093 PASCAL No.: 92-0123920
Sample introduction into the inductively coupled plasma by thermospray injection
COETZEE P P; ROBINSON J W
West-Paine laboratories, Baton Rouge LA 70820, USA
Journal: Spectroscopy letters, 1991, 24 (4) 607-623
ISSN: 0038-7010 CODEN: SPLEBX Availability: INIST-13722; 354000012299140110
No. of Refs.: 12 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: USA
Language: English Summary Language: English
Thermospray **vaporization** utilizing an electrically **heated** stainless steel **capillary** as a **nebulization** device, was studied as a means of sample introduction into the inductively coupled plasma. Vapor stripping thermospray **vaporization** , which included a **heated** spray **chamber** and condenser to remove excessive solvent vapor before injection into the plasma, resulted in an eight fold improvement in sensitivity

24/7/9 (Item 9 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

03431208 E.I. Monthly No: EIM9205-025794
Title: Droplet vaporization **in a moderate pressure gas.**
Author: Harfield, J. P.; Farrell, P. V.
Corporate Source: Univ of Wisconsin, Madison, WI, USA
Conference Title: Winter Annual Meeting of the American Society of Mechanical Engineers
Conference Location: Atlanta, GA, USA Conference Date: 19911201
Sponsor: ASME, Fluids Engineering Div
E.I. Conference No.: 15922
Source: Fluid Dynamics of Sprays - 1991 American Society of Mechanical Engineers, Fluids Engineering Division (Publication) FED v 131. Publ by ASME, New York, NY, USA. p 3-7
Publication Year: 1991
CODEN: FEDSDL ISBN: 0-7918-0883-1
Language: English
Document Type: PA; (Conference Paper) Treatment: X; (Experimental)
Journal Announcement: 9205
Abstract: Evaporation of single, liquid droplets in a **high temperature,** moderate pressure gaseous environment has been investigated experimentally. The effect of gas temperature, pressure and strength of naturally occurring convective flows were studied. Pure hydrocabon (n-heptane) and trichlorotrifluoroethane (R-113) droplets were **vaporized** in a nitrogen atmosphere within a sealed **chamber** developed to minimize forced convection. Experiments were carried out in normal and near zero gravity fields in order to isolate the effect of natural convection. In the experiments, a single droplet was attached to the end of a fine fiber by **capillary** tube. Then, the **capillary** was removed and the gas temperature and pressure quickly raised by a compressive process. The droplet was located at the point of compressive symmetry. Droplet life time and instantaneous **vaporization** rate was determined from the data recorded by remote video camera. Results are qualitatively compared with the well known D**2 droplet evaporation law. (Author abstract) 5 Refs.

24/7/12 (Item 12 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04465246 Genuine Article#: TE823 Number of References: 13
Title: HIGH-TEMPERATURE VAPORIZING CHAMBERS **FOR LARGE-VOLUME GC INJECTIONS AND ONLINE LC-GC**
Author(s): BODERIUS U; GROB K; BIEDERMANN M
Corporate Source: OFFICIAL FOOD CONTROL CANTON ZURICH,KANTONALES LAB,POB 8030/CH-8030 ZURICH//SWITZERLAND/
Journal: HRC-JOURNAL OF HIGH RESOLUTION CHROMATOGRAPHY, 1995, V18, N9 (SEP), P573-578
ISSN: 0935-6304
Language: ENGLISH Document Type: ARTICLE
Abstract: The suitability of some **chambers** for sample evaporation at high input flow rates (>100 mu l/min) was studied by visual experiments, The **chambers** were at **temperatures** far above the solvent boiling point in order to achieve the **heat** transfer required, Shooting liquid owing to violent evaporation, flooding of the **chamber** as a result of cooling, and excessively high vapor pressure causing backflow into the gas supply system were found to be the limiting factors, Fused silica **capillaries** into which a piece of wire or polyimide-free fused silica

capillary had been inserted were found to be suitable for the **vaporization** of ''easy'' solvents, such as alkanes (up to some 1.7 ml/min), bur packed beds were required to achieve favorable evaporation of dichloromethane or methanol/water (up to some 800 and 300 mu l/min, respectively).

24/7/16 (Item 16 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2004 Institution of Electrical Engineers. All rts. reserv.
6636003 INSPEC Abstract Number: B2000-08-7640-003, C2000-08-3360L-018
Title: A vaporizing water micro-thruster
Author(s): Xiongying Ye; Fei Tang; Haiqing Ding; Zhaoying Zhou
Author Affiliation: Dept. of Precision Instrum., Tsinghua Univ., Beijing, China
Conference Title: Proceedings IEEE Thirteenth Annual International Conference on Micro Electro Mechanical Systems (Cat. No.00CH36308) p.74-9
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 2000 Country of Publication: USA xiv+810 pp.
ISBN: 0 7803 5273 4 Material Identity Number: XX-2000-00791
U.S. Copyright Clearance Center Code: 0 7803 5273 4/2000/$10.00
Conference Title: Proceedings IEEE Thirteenth Annual International Conference on Micro Electro Mechanical Systems
Conference Sponsor: IEEE Robotics & Autom. Soc.; Micromachine Center
Conference Date: 23-27 Jan. 2000 Conference Location: Miyazaki, Japan
Language: English Document Type: Conference Paper (PA)
Treatment: Practical (P); Experimental (X)
Abstract: **Vaporizing** water micro-thrusters are fabricated and tested. A single micro-thruster we developed, fabricated by MEMS technologies, consists of a microresistor, a vaporizing **chamber**, a nozzle, a propellant inlet and a micro channel. The water propellant is fed into the thruster from a propellant tank by capillary force and pressure. The micro-thruster works in a pulse mode. During each period, an electric pulse is applied on the micro-resistor to heat the water in the **chamber** to **vaporize** it into high-pressure gas. A thrust is then produced as the gas exits through the nozzle. Test results show that for a single micro-thruster with pulse power of 48 W, the total impulse produced in a second is more than 0.2*10/sup -6/ N.s. (4 Refs)
Subfile: B C
Copyright 2000, IEE

24/7/17 (Item 17 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2004 BIOSIS. All rts. reserv.
0012993353 BIOSIS NO.: 200100165192
Patient-end humidifier
AUTHOR: Miller Kenneth G (Reprint)
AUTHOR ADDRESS: Santa Ana, CA, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1237 (1): Aug. 1, 2000 2000
MEDIUM: e-file
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: An improved breathing gas **humidifier** including an evaporation module which has a contact **chamber** and a flash-resistant **heat** exchanger,

a wicking layer on the **heat** exchanger, a liquid water flow controller, an electric resistance **heater**, and a breathing gas temperature controller. The contact chamber is defined by a rigid housing and in part by a flash-resistant **heat** exchanger. The rigid housing has a gas inlet for connection to a breathing gas source such as a ventilator, a water inlet for connection to a liquid water source by a liquid water flow passageway, and a breathing gas outlet connected to an inhalation passageway. The wicking layer is positioned in the contact chamber to receive and distribute liquid water. The breathing gas temperature controller is operably connected to the flow controller, the **heater**, and a temperature sensor in the breathing gas outlet.

24/7/18 (Item 18 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2004 Inst for Sci Info. All rts. reserv.
09487536 Genuine Article#: 408YX Number of References: 6
Title: Study of a vaporizing **water micro-thruster**
Author(s): Ye XY (REPRINT) ; Tang F; Ding HQ; Zhou ZY
Corporate Source: Tsing Hua Univ,Dept Precis Instruments,Beijing 100084//Peoples R China/ (REPRINT); Tsing Hua Univ,Dept Precis Instruments,Beijing 100084//Peoples R China/
Journal: SENSORS AND ACTUATORS A-PHYSICAL, 2001, V89, N1-2 (MAR 20), P 159-165
ISSN: 0924-4247 Publication date: 20010320
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND
Language: English Document Type: ARTICLE
Abstract: **Vaporizing** water micro-thrusters are fabricated and tested. A single micro-thruster fabricated using MEMS technology consists of a micro-resistor, a **vaporizing chamber** , a nozzle, a propellant inlet and a micro channel. The water propellant is fed into the thruster from a propellant tank by **capillary** force and pressure. The micro-thruster is designed to operate in pulse mode. During each period, an electric pulse is applied to the micro-resistor to **heat** the water in the **chamber** to **vaporize** it into high-pressure gas. A thrust is then produced as the gas exits through the nozzle, Test results show that for a single micro-thruster with pulse power of 30 W. the total impulse produced in a second is more than 0.2 x 10(-6) N s. (C) 2001 Elsevier Science B.V. All rights reserved.

33/7/5 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2004 BIOSIS. All rts. reserv.
0006718997 BIOSIS NO.: 198988034112
PACKED-COLUMN SUPERCRITICAL FLUID CHROMATOGRAPHY-MASS SPECTROMETRY VIA A TWO-STATE MOMENTUM SEPARATOR
AUTHOR: EDLUND O (Reprint); HENION J D
AUTHOR ADDRESS: DRUG TESTING TOXICOL, NEW YORK STATE COLL VET MED, CORNELL UNIV, 925 WARREN DRIVE, ITHACA, NY 14850, USA**USA
JOURNAL: Journal of Chromatographic Science 27 (6): p274-282 1989
ISSN: 0021-9665
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH
ABSTRACT: The practical utility of a two-stage momentum separator for combining packed-column supercritical fluid chromatography (SFC) with mass spectrometry (MS) is described. A Hewlett-Packard model 1084B liquid

chromatograph modified for packed-column SFC is connected to a linear fused-silica **capillary** restrictor housed in a **heated** probe held at 60.degree. at the terminus. A makeup of coaxial helium gas (1.5 L/min) or dissolved solvent (0.2-0.4 mL/min)can be introduced at the point of supercritical fluid expansion. The latter SFC effluent (0.3-2.0 mL/min) is expanded into a **heated** (44.degree.) desolvation **chamber** and directed through a nozzle positioned at the entrance of a two-stage momentum separator. Enrichment of the analyte relative to the volatile gases allows the transfer of sample particles to the MS ion source to produce electron ionization of flash- **volatilized** eluates. On-line SFC/MS separation and detection of low microgram levels of involatile, thermally labile analytes in synthetic mixtures is accomplished. Identification of an unknown compound in a **drug** tampering incident and the identification of an unknown metabolite isolated from horse urine is also accomplished.

40/6/2 (Item 2 from file: 155)
08140447 PMID: 2656073
Technetium-99m DTPA does not break down during ultrasound nebulization.
Apr 1989

40/6/5 (Item 5 from file: 5)
0011029215 BIOSIS NO.: 199799663275
Ultrasonic nebulisers for pulmonary drug **delivery**
1997

40/7/3 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2004 Elsevier Science B.V. All rts. reserv.
05880468 EMBASE No: 1994296140
Generation **of** aerosol **particles by boiling of suspensions**
Kousaka Y.; Horiuchi T.; Endo Y.; Aotani S.
Chemical Engineering Department, University of Osaka Prefecture,Sakai, Osaka 593 Japan
Aerosol Science and Technology (AEROSOL SCI. TECHNOL.) (United States) 1994, 21/3 (236-240)
CODEN: ASTYD ISSN: 0278-6826
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
A new method for **generation** of 1aerosol particles, which will be called 'boiling method,' is proposed. This method consists of (1) suspending particles in a liquid, (2) passing the suspension through a **heated** **capillary** tube, and (3) boiling of suspension to **generate** an **aerosol** . Aerosol particles thus generated are found to be effectively dispersed into primary (not coagulated) particles in high concentration. Such a dispersion is difficult if not impossible to produce by conventional nebulizers.

42/6/4 (Item 1 from file: 73)
02603162 EMBASE No: 1984222120
Design and performance of a stable low-output sulfuric acid generator for the production of submicrometer-size aerosol
1984

42/7/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

(c) 2004 BIOSIS. All rts. reserv.
0014344011 BIOSIS NO.: 200300301830
Dual capillary fluid vaporizing device
AUTHOR: Nichols Walter A (Reprint); Cox Kenneth A; Nguyen Tung Tien
AUTHOR ADDRESS: Midlothian, VA, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1270 (4): May 27, 2003 2003
MEDIUM: e-file
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: A fluid vaporizing device useful for vaporizing fluid into an **aerosol** and includes first and second **capillary** tubes connected electrically in series by providing separate electrodes at the inlet ends of each **capillary** tube, and connecting the outlet ends of the **capillary** tubes by an electrical connection that connects the outlet ends both electrically and thermally. The **capillary** tubes are **heated** by the flow of electricity therethrough, and liquid flowing through the tubes is vaporized. The outlet ends of the **capillary** tubes are easily maintained at a temperature for optimizing **aerosol generation** since there is minimal **heat** loss through the connection connecting the outlet ends.

42/7/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2004 BIOSIS. All rts. reserv.
0014307147 BIOSIS NO.: 200300265791
Aerosol generator **and methods of making and using an** aerosol generator
AUTHOR: Cox Kenneth A (Reprint); Beane Timothy Paul; Sweeney William R
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1270 (1): May 6, 2003 2003
MEDIUM: e-file
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: An **aerosol generator** includes a **flow passage** having an inlet and an outlet, a **heater** arranged relative to the **flow passage** for **heating** the **flow passage** , a source of material to be volatilized in communication with the inlet of the **flow passage** , a valve to open and close communication between the source of material and the inlet of the **flow passage** , and a pressurization arrangement for causing material in the source of material to be introduced into the **flow passage** when the valve is in an open position. The **aerosol generator** further includes a source of power for operating the **heater** and the valve, and a control device for controlling supply of power from the source of power to the **heater** and the valve.

42/7/11 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
(c) 2004 Elsevier Eng. Info. Inc. All rts. reserv.
04577561 E.I. No: EIP96123472176
Title: Characterization of the aerosols generated **by a new microwave thermal nebulizer**
Author: Bordera, L.; Todoli, J.L.; Mora, J.; Canals, A.; Hernandis, V.
Corporate Source: Universidad de Alicante, Alicante, Spain

Conference Title: Proceedings of the 1996 European Aerosol Conference
Conference Location: Delft, Neth Conference Date: 19960909-19960912
E.I. Conference No.: 45742
Source: Journal of Aerosol Science v 27 n Suppl 1 Sep 1996. p S387-S388
Publication Year: 1996
CODEN: JALSB7 ISSN: 0021-8502
Language: English
Document Type: JA; (Journal Article) Treatment: G; (General Review); X; (Experimental)
Journal Announcement: 9702W1
Abstract: The **aerosols generated** by microwave thermal nebulizer (MWTN) in which the liquid vein is **heated** through the absorption of microwave radiation are characterized. The MWTN consisted of a polytetrafluoroethylene (PTFE) **capillary** placed inside a focused microwave (MW) oven. A laser Fraunhofer diffraction system was used to study the influence of MW power, liquid flow and liquid composition on the aerosol drop size distribution (DSD). The results were compared with those obtained using a concentric pneumatic nebulizer (PN). The aerosol became finer as the MW power and/or liquid flow increased. Viscosity played a detrimental effect on the absorption of MW radiation. 2 Refs.

54/6/5 (Item 5 from file: 73)
02336876 EMBASE No: 1983215880
Origin and kinetics of pulmonary macrophages during an inflammatory reaction induced by intra-alveolar administration of aerosolized heat-killed BCG
1983

54/6/10 (Item 10 from file: 155)
09502535 PMID: 1431863
Degradation of malathion in thermally generated aerosols.
Jun 1992

54/6/16 (Item 16 from file: 5)
0011531643 BIOSIS NO.: 199800325890
Oxygen and aerosolized **drug delivery: Matching the device to the patient**
1998

54/6/17 (Item 17 from file: 73)
07540536 EMBASE No: 1999031028
On the paper 'estimation of the size distribution of aerosol **'s** produced **by jet nebulizers as a function of time'**
1999

54/6/18 (Item 18 from file: 73)
11990948 EMBASE No: 2003101999
MR imaging of lung ventilation with aerosolized gadolinium-chelates
MR-BILDGEBUNG DER LUNGENVENTILATION MITTELS AEROSOLIERTER GADOLINIUM-CHELATE
01 FEB 2003

54/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2004 The Dialog Corp. All rts. reserv.
02897858 PMID: 5310185
A new method for the generation of aerosols of insoluble particles for

use in inhalation studies. LF-41.
Kanapilly G M; Raabe O G; Newton G J
Fission product inhalation project technical progress report. Lovelace Foundation for Medical Education and Research (UNITED STATES) Nov 1969, p61-9, Journal Code: 21830910R
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Record Date Created: 19700723
Record Date Completed: 19700723

54/7/9 (Item 9 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2004 Elsevier Science B.V. All rts. reserv.
05042669 EMBASE No: 1992182885
An aerosol generator for high concentrations of 0.5-5-mum solid particles of practical monodispersity
Japuntich D.A.; Stenhouse J.I.T.; Liu B.Y.H.
Occup. Health and Envtl. Safety Div., 3M Company, 3M Center,St. Paul, MN 55144 United States
Aerosol Science and Technology (AEROSOL SCI. TECHNOL.) (United States) 1992, 16/4 (246-254)
CODEN: ASTYD ISSN: 0278-6826
DOCUMENT TYPE: Journal; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
A continuous-flow, evaporation-condensation **aerosol generator** has been designed to produce particles of practical monodispersity of stearic acid in concentrations of over 1 g/msup 3 at flow rates >6 L/min. Pure stearic acid containing a dissolved impurity is melt-sprayed and evaporated, producing a nuclei- vapor mixture. The mixture is recondensed and then quickly quenched into spherical, solid particles of a narrow size distribution. The condenser design is a straight, insulated glass **tube** of 5 cm in inner diameter and of 110 cm in length. A **heating** and flow straightening conditioning section previous to the condenser provides a relatively flat condensation front across the tube diameter, while the insulated condenser walls in free convection create a low radial temperature gradient, both of which enhance particle monodispersity with particle geometric standard deviations < 1.25. The dynamic condenser conditions for the suppression of homogeneous nucleation were investigated as a function of the ratio of the Grashof- Prandtl numbers product to the Reynolds number.

54/7/12 (Item 12 from file: 94)
DIALOG(R)File 94:JICST-EPlus
(c)2004 Japan Science and Tech Corp(JST). All rts. reserv.
02356360 JICST ACCESSION NUMBER: 95A0629016 FILE SEGMENT: JICST-E
An Attempt for Nebulization Therapy from the Vapor Aerosol Generator Using Mineral Water. (Continued).
SATO MOTOICHI (1); ISHIZUKA YOICHI (2); HIRAYAMA HIROMITSU (3); ISHIKAWA MICHIO (3); (2) Teikyo Univ., Mizonokuchi Hosp.; (3) TDK Corp.
Jibi Inkoka Tenbo(Oto-Rhino-Laryngology Tokyo), 1995, VOL.38,NO.Suppl 2, PAGE.102-108, FIG.15, REF.5
JOURNAL NUMBER: Z0542BAD ISSN NO: 0386-9687
UNIVERSAL DECIMAL CLASSIFICATION: 615.472/.473 612.2:007 616.21-08
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: In order to develop a new type **aerosol generator** (using dipersion by compressor only), capable of **generating vapor heated** to a temperature of 43.DEG.C. at a rate of 2ml/min., without the use of ultrasonic techniques or vibration, we have, since last year, been adding consistently to the medication delivery systems in this device, as described previously. While developing this device, we have paid attention to a difficult problem, that when steam is introduced into the nasal cavity attached to the nasal adaptor, the temperature of that steam at the nostril should be reduced instantaneously by about 10.DEG.C., since we consider that high temperature is not acceptable to the human nose. Therefore, after consideration, we have made two lateral orifices in the nasal adaptor (the orifices were later moved to the connector between the aerosol duct and nasal adaptor) and we confirmed that hot **aerosol** steam flows strongly into the nasal cavity. Clinical research literature provided no information about the above problem, and it was not clear whether the nasal adaptor contributed to this problem or not. Base on the above problem, we must think about options for the introduction of **aerosol** mist into **nebulization** therapy. In addition, monitoring of the **aerosol generating** circuit should include the observation of appropriate temperatures. (author abst.)

54/7/19 (Item 19 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12374293 PMID: 12753748

Terbutaline microparticles suitable for aerosol **delivery** produced **by supercritical assisted atomization.**

Reverchon E; Della Porta G
Dipartimento di Ingegneria Chimica ed Alimentare, Universita di Salerno, Via Ponte don Melillo, 84084 (SA), Fisciano, Italy. ereverchon@unisa.it

International journal of pharmaceutics (Netherlands) Jun 4 2003, 258 (1-2) p1-9, ISSN 0378-5173 Journal Code: 7804127
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A new micronization technique called supercritical assisted **atomization** has been used to produce terbutaline microparticles with controlled particle size distribution in the range of **drug** particles deliverable by **aerosol**. The process is based on the solubilization of a fixed amount of supercritical carbon dioxide in a liquid solution; then, the ternary mixture is sprayed through a nozzle and atomized in order to produce microparticles. Water has been used as the liquid solvent; **heated** nitrogen has also been delivered into the precipitator to evaporate the liquid droplets. The process has been first optimized with respect to pressure and temperature (mixing temperature and pressure, precipitation temperature) and very mild operation conditions have been selected; then, the influence of the solute concentration in the liquid solution on particle size has been studied. The terbutaline produced powders were characterized with respect to morphologies and particle size. Spherical particles with very narrow volumetric particle size distributions were produced. Particularly, operating at 30 and 50mg of terbutaline per ml of water, more than 90% of the two distributions ranged between 1 and 3

microm; at 80 mg/ml more than 99% of the distribution ranged between 1 and 4 microm. HPLC analysis confirmed that no chemical degradation occurred in the **drug** as a consequence of the supercritical processing.

Record Date Created: 20030519

Record Date Completed: 20030808

```
File  98:General Sci Abs/Full-Text 1984-2004/May
File   9:Business & Industry(R) Jul/1994-2004/May 13
File  16:Gale Group PROMT(R) 1990-2004/May 17
File 160:Gale Group PROMT(R) 1972-1989
File 148:Gale Group Trade & Industry DB 1976-2004/May 17
File 621:Gale Group New Prod.Annou.(R) 1985-2004/May 14
File 149:TGG Health&Wellness DB(SM) 1976-2004/May W2
File 636:Gale Group Newsletter DB(TM) 1987-2004/May 17
File 441:ESPICOM Pharm&Med DEVICE NEWS 2004/May W2
File 369:New Scientist 1994-2004/May W2
File 370:Science 1996-1999/Jul W3
File  43:Health News Daily - Subs 1990-2004/May 14
File 129:PHIND(Archival) 1980-2004/May W2
File 135:NewsRx Weekly Reports 1995-2004/May W1
Set     Items   Description
S1      10694   (PRODUC???? OR GENERAT???)(1N)AEROSOL? ? OR AEROSOLIZ? OR -
             AEROSOLIS?
S2      26945   (FLOW OR FLUID OR LIQUID)()PASSAGE? OR CAPILLARY OR CAPILL-
             ARIES
S3     768321   HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4     374463   SLEEVE? OR SHEATH OR SHEATHS OR CHAMBER? ?
S5    5206656   DETACH???? OR REMOV???? OR ATTACH???? OR RELEAS???? OR APP-
             END? OR DISENGAG?????
S6     275076   MEDICAMENT? ? OR MEDICAT?
S7    2729944   MEDICAL OR MEDICIN??
S8    1965660   DRUG? ?
S9    1779364   PHARMACEUTICAL? ?
S10    221828   ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR CHOLINERG-
             IC? ? OR INFLAMMATOR? OR BIOTIC? ? OR HISTAMINE? ? OR TUSSIVE?
              ?) OR ANTIALLERGIC? ? OR ANTIINFLAMMATOR??? OR ANTICHOLINERG-
             IC? ? OR ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSS...
S11    149255   DIURETIC? ? OR BRONCHODILATOR? ? OR HORMONE? ?
S12      1643   S4(1N)S5
S13         0   S1 AND S2 AND S3 AND S12
S14        15   S1 AND S2 AND S3 AND S4
S15        12   RD (unique items)
S16     50867   ATOMIS? OR ATOMIZ? OR VOLATILIZ? OR VOLATILIS? OR VAPORIS?
             OR VAPORIZ? OR VAPOURIS? OR VAPOURIZ? OR NEBULIZ? OR NEBULIS?
             OR HUMIDIFI? OR INHALER? ?
S17        16   S2 AND S3 AND S12
S18        16   S17 NOT S14
S19         0   S14/2004
S20         8   S15 AND S6:S11
S21         8   Sort S20/ALL/PD,A [not relevant]
S22        12   S18 AND S6:S11
S23         0   S16 AND S22
S24     46297   AEROSOL? ?
S25         0   S22 AND S24
S26      1822   S1/TI,DE
S27        38   S26 AND S3
S28        38   S27 NOT (S14 OR S17)
S29        32   RD (unique items)
S30        14   S29 AND S6:S11
S31         0   S30/2004
S32        14   Sort S30/ALL/PD,A
S33      1463   (PRODUCE OR PRODUCES OR PRODUCING OR GENERAT??? OR PRODUCE-
```

```
            D) (1N) AEROSOL? ?
S34         79   S33/TI
S35         78   S34 NOT (S14 OR S17 OR S30)
S36         63   RD (unique items)
S37          2   S36/2004
S38         61   S36 NOT S37
S39         16   S38 AND S6:S11
S40         16   Sort S39/ALL/PD,A
```

32/8/7 (Item 7 from file: 149)
DIALOG(R)File 149:(c) 2004 The Gale Group. All rts. reserv.
01372898 SUPPLIER NUMBER: 12940248 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Transmission of Legionella by respiratory equipment and aerosol generating devices.
1992
WORD COUNT: 2606 LINE COUNT: 00277
SPECIAL FEATURES: illustration; chart; table
DESCRIPTORS: Legionella pneumophila--Transmission; Humidifiers--Evaluation; Respiratory therapy--Equipment and supplies

32/8/8 (Item 8 from file: 148)
DIALOG(R)File 148:(c)2004 The Gale Group. All rts. reserv.
08091107 SUPPLIER NUMBER: 15906094 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Safety and potential efficacy of an aerosolized **surfactant in human sepsis-induced adult respiratory distress syndrome.**
Nov 9, 1994
WORD COUNT: 5330 LINE COUNT: 00459
SPECIAL FEATURES: illustration; table; graph
INDUSTRY CODES/NAMES: HLTH Healthcare
DESCRIPTORS: Lung surfactant, Synthetic--Evaluation; Bacterial infections --Complications; Acute respiratory distress syndrome--Care and treatment

32/8/10 (Item 10 from file: 149)
DIALOG(R)File 149:(c) 2004 The Gale Group. All rts. reserv.
01758380 SUPPLIER NUMBER: 20085823 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Airway deposition and clearance and systemic pharmacokinetics of amiloride following aerosolization **with an ultrasonic nebulizer to normal airways.**
1997
WORD COUNT: 5769 LINE COUNT: 00480
SPECIAL FEATURES: photograph; graph; illustration
DESCRIPTORS: Amiloride--Physiological aspects; Cystic fibrosis-- **Drug** therapy; Nebulizers and vaporizers--Usage

32/8/11 (Item 11 from file: 149)
DIALOG(R)File 149:(c) 2004 The Gale Group. All rts. reserv.
01865183 SUPPLIER NUMBER: 56881536 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Use of Aerosolized Antibiotics **in Patients With Cystic Fibrosis.**
1999
WORD COUNT: 10124 LINE COUNT: 00899
DESCRIPTORS: Cystic fibrosis-- **Drug** therapy; **Antibiotics** --Administration and dosage

32/8/12 (Item 12 from file: 149)
DIALOG(R)File 149:(c) 2004 The Gale Group. All rts. reserv.
01900243 SUPPLIER NUMBER: 61635217 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Dose-Response to Inhaled Aerosolized **Prostacyclin for Hypoxemia Due to**

ARDS(*).
2000
WORD COUNT: 6415 LINE COUNT: 00561
DESCRIPTORS: Hypoxia-- **Drug** therapy; Acute respiratory distress syndrome-- **Drug** therapy; Prostacyclin--Evaluation
GEOGRAPHIC CODES/NAMES: 1USA United States

32/3,AB,K/1 (Item 1 from file: 160)
DIALOG(R)File 160:Gale Group PROMT(R)
(c) 1999 The Gale Group. All rts. reserv.
00717902
Shering Corp is using induction heating **to test aerosols for** pharmaceutical **applications.**
Aerosol Age January, 1982 p. 14-171
A Solidyne-Thermatron Hyforce Induction **Heater** Unit, operating at 2 MHz, rapidly **heats** the **aerosols** as they pass through the electromagnetic field of the induction coil. The process raises the internal pressure to about 90 psi by **heating** the **aerosol** can and its contents to about 130 F. Stress developed at this pressure is sufficient to separate the leakers from the nonleakers and assure long shelf life. The induction **heater** unit is produced by Stanelco (UK), a subsidiary of Solidyne (Bay Shore, NY). Induction **heating** is quick, requires no daily water changing and cleaning of bath troughs, no drying tunnels, and causes fewer problems than water baths. The filled aerosols are automatically fed into a narrow PVC belt, at spaced intervals, and carried through a polypropylene tunnel inside the induction coil. The Schering set-up is specifically designed for prescription **pharmaceutical** products using a noncombustible fluorocarbon propellant. Because induction **heating** takes place in the air, there is no medium that can show visible bubbles. A Mine Safety Appliances combustible gas detection system is used in conjunction with the induction **heater** . As the product passes through the work coil on the production line, can temperature is raised to about 130 F. A gas accumulator hood is placed directly over the work coil area. When propellant gas is detected, the group of cans is rejected automatically and is fed into a 2nd leak detector in single file. Those that are acceptable are gated to a storage area that will automatically feed back onto the main conveyor during the 5-sec interruption of production flow caused by other rejects. The leakers responsible for the rejection are gated off to a waste area.
PRODUCT NAME: Personal **Product Aerosols** ; Stress, Strain & Flaw Detectors

32/3,AB,K/3 (Item 3 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2004 The Gale Group. All rts. reserv.
03531666 SUPPLIER NUMBER: 06441280 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Aerosolized **pentamidine promising in pneumocystis therapy, prophylaxis.**
Merz, Beverly
JAMA, The Journal of the American Medical Association, v259, n22, p3223(2)
June 10, 1988
ISSN: 0098-7484 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 1188 LINE COUNT: 00095
According to early studies, not only does the **aerosolized** form of the **drug** appear to eradicate and prevent PCP, it does so without many of the serious side...

32/3,AB,K/5 (Item 5 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

(c) 2004 The Gale Group. All rts. reserv.
01733909 Supplier Number: 42167963
An Alternative to Gas-Propelled Aerosol Products
Chemical Marketing Reporter, p28
June 24, 1991
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Tabloid; Trade
Word Count: 242
... storage and transport which lowers manufacturing and distribution costs; and explosion proof if exposed to **heat** or sunlight.
The container can be used in conjunction with any product designed to be...
...cosmetics, air fresheners, degreasers, lubricants, paints, cleaning products, food products and numerous applications in the **medical** and health care field.
Inter Airspray's US representative Rolf K. Svensson says the environmentally...

32/3,AB,K/6 (Item 6 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.
02087786 Supplier Number: 42701801
NEW ENVIRONMENTALLY-SOUND EUROSPRAY (TM) AIR-POWERED SPRAY CONTAINER COULD REVOLUTIONIZE AEROSOL PRODUCTS
News Release, p1
Jan 29, 1992
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 1088
... and transport which positively impacts manufacturing and distribution costs;
o explosion-proof if exposed to **heat** or sunlight under normal conditions;
o stability as a result of its low center of...
...more of the actual spray product can be packaged in the container;
o imperviousness to **heat** exposure; the cannister will not explode when exposed to sunlight under normal conditions, which is...
...o cheaper transport, shipping and storage, since the filled container does not involve explosive or **heat** -sensitive propellants;
o standard capacity of 330 mL (11 ounces);
o unfilled weight of only...

32/3,AB,K/14 (Item 14 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2004 The Gale Group. All rts. reserv.
4132658 Supplier Number: 108150472
Form meets function: product differentiation is key in the competitive world of aerosols **and** producers **are making that difference with product shaping technologies and actuator innovation.**
(Market report)
Soap, Perfumery & Cosmetics, v 76, n 9, p 50
September 2003
DOCUMENT TYPE: Journal ISSN: 0037-749X (United Kingdom)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 1926
TEXT:

It's a worrying finding. About half of all beauty and personal care sector decision makers interviewed for a recent survey are ill-informed about environmental matters concerning **aerosols**. This was the key finding from research recently commissioned by the British **Aerosol** Manufacturers Association (BAMA). The association used an external agency to question marketing professionals who influence the choice of packaging for consumer goods. It wanted to establish what the aerosol industry is doing right, what it is doing wrong and how it can improve.
TEXT:
...aerosol products not seen elsewhere in the world. Products such as leg sprays and herbal **medicines** , for example, are very popular there.
In Germany, as much as 80% of aersols aregoers and already available in Europe, and printing with **heat** sensitive ink which will react when touched, something the company says it's not far...

40/8/4 (Item 4 from file: 636)
DIALOG(R)File 636:(c) 2004 The Gale Group. All rts. reserv.
02934527 Supplier Number: 45972899 (USE FORMAT 7 FOR FULLTEXT)
THE CHARACTERIZATION OF AEROSOLS PRODUCED **BY SURGICAL PROCEDURES**
Dec 1, 1995
Word Count: 351
PUBLISHER NAME: Merton Allen Associates
INDUSTRY NAMES: BIO (Biotechnology); BUSN (Any type of business); **DRUG** (**Pharmaceuticals** and Cosmetics); HLTH (Healthcare - **Medical** and Health)

40/8/12 (Item 12 from file: 149)
DIALOG(R)File 149:(c) 2004 The Gale Group. All rts. reserv.
01790603 SUPPLIER NUMBER: 21081749 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Effects of repetitive use and cleaning techniques of disposable jet nebulizers on aerosol generation.
1998
WORD COUNT: 5087 LINE COUNT: 00465
SPECIAL FEATURES: table; graph; illustration
DESCRIPTORS: Nebulizers and vaporizers--Maintenance and repair; Respiratory therapy--Equipment and supplies

40/3,AB,K/9 (Item 9 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2004 The Gale Group. All rts. reserv.
1959281 Supplier Number: 01959281
Russia: Units capable to produce **healing** aerosols **for treatment of lung diseases.**
(TsNII Khimii i Mekhaniki has developed a medical **device that dispenses respiratory treatments via an aerosol mist)**
Inzhenernaya Gazeta, p 2
September 08, 1997
DOCUMENT TYPE: Journal ISSN: 0025-3790 (Russia)
LANGUAGE: Russian RECORD TYPE: Abstract
ABSTRACT:
Russia: Dispersion of **medical** preparations with creation of thin **aerosol** particles substantially increased efficiency of lung disease treatment. Inhaled with **aerosols** small particles of **drugs** are delivered directly to alveoli affected by the disease. A unit capable to produce healing **aerosols** has been developed at the TsNII Khimii i Mekhaniki chemistry and mechanics research institute (Moscow, Russia). Use of the first pilot unit at the

Vidnoe hospital near Moscow confirmed significant improvement in treatment of patients suffering of lung diseases. The technology used in the **aerosol** producing units has been awarded with a gold medal at the Eureca-95 exhibition in Brussels.
INDUSTRY NAMES: **Medical** devices & diagnostics

40/3,AB,K/11 (Item 11 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2004 The Gale Group. All rts. reserv.
01862395 SUPPLIER NUMBER: 56642581
AeroGen aims to be top player in pulmonary drug **delivery.(company develops electronically controlled liquid** aerosol generator)
SCRIP World Pharmaceutical News, 2302, 20(2)
Jan 21, 1998
PUBLICATION FORMAT: Magazine/Journal ISSN: 0143-7690 LANGUAGE: English
RECORD TYPE: Citation TARGET AUDIENCE: Trade
DESCRIPTORS: **Medical** equipment and supplies industry...
... **Drug** delivery systems
...PRODUCT/INDUSTRY NAMES: 2833500 (Bulk Respiratory **Drugs**)
NAICS CODES: 33911 **Medical** Equipment and Supplies Manufacturing; 325411 **Medicinal** and Botanical Manufacturing

40/7/15 (Item 15 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2004 The Gale Group. All rts. reserv.
09480055 Supplier Number: 83374185 (THIS IS THE FULLTEXT)
3M Animal Care. (Pharma in Brief).(to produce aerosol drug **delivery system)(Brief Article)**
Chemical Market Reporter, v261, n8, p12(1)
Feb 25, 2002
TEXT:
3M ANIMAL CARE Products will initiate commercial production this quarter for an **aerosol drug** delivery system that provides a means of treating respiratory disease to allow horses to breath easier. Bayer Corp. is providing engineering resins for a number of the inhaler's components, including the bulb, base unit, collar, trigger and bail.

```
File 155:MEDLINE(R) 1966-2004/May W2
File   5:Biosis Previews(R) 1969-2004/May W2
File  73:EMBASE 1974-2004/May W2
File  34:SciSearch(R) Cited Ref Sci 1990-2004/May W2
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
File 144:Pascal 1973-2004/May W1
File   2:INSPEC 1969-2004/May W1
File   6:NTIS 1964-2004/May W3
File   8:Ei Compendex(R) 1970-2004/May W1
File  94:JICST-EPlus 1985-2004/Apr W3
File  95:TEME-Technology & Management 1989-2004/Apr W4
File  99:Wilson Appl. Sci & Tech Abs 1983-2004/Apr
File  65:Inside Conferences 1993-2004/May W2
File  35:Dissertation Abs Online 1861-2004/Apr
Set     Items   Description
S1     226496   AEROSOLIS? OR AEROSOLIZ? OR VOLATILIZ? OR VOLATILIS? OR VA-
             PORIZ? OR VAPORIS? OR VAPOURIZ? OR VAPOURIS? OR NEBULIZ? OR N-
             EBULIS? OR ATOMIZ? OR ATOMIS? OR (GENERAT? OR PRODUCE? ? OR P-
             RODUCING OR PRODUCTION)(1N)AEROSOL? ?
S2     466256   (FLOW OR FLUID)()PASSAGE? OR CAPILLARY OR CAPILLARIES
S3    2762922   HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4     598086   CHAMBER? ? OR SLEEVE? OR SHEATH OR SHEATHS
S5    2403521   DROPLET? ? OR PARTICLE? ? OR AEROSOL? ?
S6    4079602   SIZE? ? OR DIAMETER? ? OR DIAMETRE? ? OR MMAD
S7    4909902   LIQUID? ? OR FLUID? ? OR MEDICAMENT? ? OR MEDICAT?
S8    2356000   ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR INFLAMMAT-
             OR???) OR ANTICHOLINERGIC? ? OR HORMONE? ?
S9    1063112   ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSSIVE? ? OR DIU-
             RETIC? ? OR BRONCHODILATOR? ?
S10       658   S1 AND S2 AND S3
S11        66   S10 AND S4
S12    351977   S5(1N)S6
S13         3   S11 AND S12
S14         3   RD (unique items)
S15        10   S11 AND S6
S16         8   S15 AND S7
S17         0   S15 AND S8:S9
S18         6   S16 NOT S13
S19         3   RD (unique items)
S20        50   S11 AND S7:S9
S21        42   S20 NOT (S13 OR S16)
S22        31   RD (unique items)
S23         2   S22/2003:2004
S24        29   S22 NOT S23
S25        29   Sort S24/ALL/PY,A
S26        28   S10 AND S12
S27        25   S26 NOT (S13 OR S16 OR S20)
S28        19   RD (unique items)
S29         4   S28/2003:2004
S30        15   S28 NOT S29
S31        15   Sort S30/ALL/PY,A

14/6/1     (Item 1 from file: 34)
02099175   Genuine Article#: KA746   Number of References: 63
Title: THERMOSPRAY SAMPLE INTRODUCTION TO ATOMIC SPECTROMETRY  (Abstract
    Available)
```

14/6/2 (Item 2 from file: 34)
01968560 Genuine Article#: JP887 Number of References: 18
Title: LIQUID JET EVOLUTION FROM A GAS-CHROMATOGRAPHIC INJECTOR (Abstract Available)

19/6/1 (Item 1 from file: 5)
0008230227 BIOSIS NO.: 199293073118
ATMOSPHERIC PRESSURE ION-SAMPLING SYSTEM FOR LIQUID **CHROMATOGRAPHY-MASS SPECTROMETRY ANALYSES ON A BENCHTOP MASS SPECTROMETER**
1992

19/6/2 (Item 1 from file: 34)
05002913 Genuine Article#: UY744 Number of References: 31
Title: NEBULIZATION **AND ANALYSIS CHARACTERISTICS OF A PARTICLE-BEAM HOLLOW-CATHODE GLOW-DISCHARGE ATOMIC-EMISSION SPECTROMETRY SYSTEM** (

25/6/1 (Item 1 from file: 144)
02163581 PASCAL No.: 78-0214991
EN RUSSE.
(FLUX THERMIQUES CRITIQUES LORS DE LA VAPORISATION **DU SODIUM A PARTIR DE STRUCTURES A POROSITE CAPILLAIRE DE CALODUCS ET DE CHAMBRES DE** VAPORISATION)
(CRITICAL HEAT **FLUXES BY SODIUM** VAPORIZING **FROM POROUS** CAPILLARY **STRUCTURES OF** HEAT **PIPES AND** VAPORIZING CHAMBERS)
1977

25/6/2 (Item 2 from file: 8)
00740404
Title: CRITICAL HEAT **FLUXES WITH THE** VAPORIZATION **OF SODIUM FROM THE** CAPILLARY **-POROUS STRUCTURES OF** HEAT **TUBES AND VAPOR** CHAMBERS **.**
Publication Year: 1977

25/6/3 (Item 3 from file: 8)
00960844
Title: CAPILLARY **RESTRICTION IN INITIAL STAGES OF EVAPORATION OF** LIQUID **METALS FROM** CAPILLARY **-POROUS STRUCTURES.**
Publication Year: 1979

25/6/6 (Item 6 from file: 6)
1138874 NTIS Accession Number: DE84702512
Vaporization Heat **Exchange for Concave** Liquid **Surfaces**
1983

25/6/7 (Item 7 from file: 2)
02453119 INSPEC Abstract Number: A85064021
Title: Electrohydrodynamic injection of liquids **into a mass spectrometer**
Publication Date: Aug. 1984

25/6/10 (Item 10 from file: 8)
02988150
Title: Transfer of heat **and mass in** capillary **-porous materials in the hygroscopic state on drying by means of reduction in pressure.**
Publication Year: 1989

25/6/12 (Item 12 from file: 35)

01124924 ORDER NO: AAD90-29079
ANALYSIS OF EVAPORATION AND CONDENSATION PROCESSES IN COMPLEX CONVECTIVE FLOWS
Year: 1989

25/6/13 (Item 13 from file: 155)
08181649 PMID: 2738147
Packed-column supercritical fluid **chromatography/mass spectrometry via a two-stage momentum separator.**
Jun 1989

25/6/15 (Item 15 from file: 5)
0007334037 BIOSIS NO.: 199090118516
PTV VAPOR OVERFLOW PRINCIPLES OF A SOLVENT EVAPORATION TECHNIQUE FOR INTRODUCING LARGE VOLUMES IN CAPILLARY **GC**
1990

25/6/16 (Item 16 from file: 8)
03431208
Title: Droplet vaporization **in a moderate pressure gas.**
Conference Title: Winter Annual Meeting of the American Society of Mechanical Engineers
Publication Year: 1991

25/6/17 (Item 17 from file: 34)
01240052 Genuine Article#: GG693 Number of References: 31
Title: SIMPLE DIRECT LIQUID **INTRODUCTION SYSTEM USABLE AS AN INTERFACE FOR** LIQUID **-CHROMATOGRAPHY MASS-SPECTROMETRY ON QUADRUPOLE AND MAGNETIC-SECTOR MASS SPECTROMETERS** (Abstract Available)

25/6/18 (Item 18 from file: 34)
01110123 Genuine Article#: FW831 Number of References: 12
Title: SAMPLE INTRODUCTION INTO THE INDUCTIVELY COUPLED PLASMA BY THERMOSPRAY INJECTION (Abstract Available)

25/6/19 (Item 19 from file: 34)
01929323 Genuine Article#: JM379 Number of References: 33
Title: CHARACTERIZATION DETECTORS FOR LIQUID **-CHROMATOGRAPHY - LC FT-IR AND LC ICP-AES** (Abstract Available)

25/6/21 (Item 21 from file: 34)
02564243 Genuine Article#: LL714 Number of References: 20
Title: PERFORMANCE OF A MODULAR THERMOSPRAY INTERFACE FOR SIGNAL ENHANCEMENT IN FLAME ATOMIC-ABSORPTION SPECTROMETRY COUPLED ONLINE TO FLOW-INJECTION OR LIQUID **-CHROMATOGRAPHY** (Abstract Available)

25/6/22 (Item 22 from file: 34)
04466218 Genuine Article#: TE922 Number of References: 21
Title: ONLINE LC-GC TRANSFER VIA A HOT VAPORIZING CHAMBER **AND VAPOR DISCHARGE BY OVERFLOW - INCREASED SENSITIVITY FOR THE DETERMINATION OF MINERAL-OIL IN FOODS** (Abstract Available)

25/6/23 (Item 23 from file: 34)
04465246 Genuine Article#: TE823 Number of References: 13
Title: HIGH-TEMPERATURE VAPORIZING CHAMBERS **FOR LARGE-VOLUME GC INJECTIONS AND ONLINE LC-GC** (Abstract Available)

25/6/24 (Item 24 from file: 73)
06435896 EMBASE No: 1996099790
Speciation of chromium using thermospray nebulization **as sample introduction into inductively coupled plasma mass spectrometry**
1996

25/6/26 (Item 26 from file: 34)
07632156 Genuine Article#: 189WA Number of References: 32
Title: Sample nebulization **for minimization of transition metal interferences with selenium hydride generation ICP-AES**
Publication date: 19990315

25/6/27 (Item 27 from file: 8)
08512759
Title: Study of a vaporizing **water micro-thruster**
Publication Year: 2001

31/6/1 (Item 1 from file: 6)
0613144 NTIS Accession Number: AD-814 721/7/XAB
Cloud Chemistry of Fallout Formation (Final rept)
13 Jan 67

31/6/5 (Item 5 from file: 73)
02603162 EMBASE No: 1984222120
Design and performance of a stable low-output sulfuric acid generator for the production of submicrometer- size aerosol
1984

31/6/7 (Item 7 from file: 155)
07766528 PMID: 3284867
Synthetic smoke with acrolein but not HCl produces pulmonary edema.
Mar 1988

31/6/8 (Item 8 from file: 34)
03511578 Genuine Article#: PG081 Number of References: 54
Title: INVESTIGATION OF COMBINED MICROWAVE AND CONVECTIVE DRYING OF CAPILLARY **-POROUS BULK MATERIAL** (Abstract Available)

31/6/11 (Item 11 from file: 8)
06778952
Title: Vibration-induced droplet atomization **(VIDA) for two-phase thermal management**
Conference Title: 2001 ASME International Mechanical Engineering Congress and Exposition
Publication Year: 2001

31/6/14 (Item 14 from file: 34)
11227942 Genuine Article#: 625HM Number of References: 25
Title: The formation of porous membranes by filtration of aerosol nanoparticles (ABSTRACT AVAILABLE)
Publication date: 20021000

31/7/9 (Item 9 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04577561 E.I. No: EIP96123472176
Title: Characterization of the aerosols generated by a new microwave thermal nebulizer
Author: Bordera, L.; Todoli, J.L.; Mora, J.; Canals, A.; Hernandis, V.
Corporate Source: Universidad de Alicante, Alicante, Spain
Conference Title: Proceedings of the 1996 European Aerosol Conference
Conference Location: Delft, Neth Conference Date: 19960909-19960912
E.I. Conference No.: 45742
Source: Journal of Aerosol Science v 27 n Suppl 1 Sep 1996. p S387-S388
Publication Year: 1996
CODEN: JALSB7 ISSN: 0021-8502
Language: English
Document Type: JA; (Journal Article) Treatment: G; (General Review); X; (Experimental)
Journal Announcement: 9702W1
Abstract: The **aerosols** generated by **microwave thermal nebulizer** (MWTN) in which the liquid vein is heated through the absorption of microwave radiation are characterized. The MWTN consisted of a polytetrafluoroethylene (PTFE) **capillary** placed inside a focused microwave (MW) oven. A laser Fraunhofer diffraction system was used to study the influence of MW power, liquid flow and liquid composition on the aerosol drop size distribution (DSD). The results were compared with those obtained using a concentric pneumatic nebulizer (PN). The **aerosol** became finer as the MW power and/or liquid flow increased. Viscosity played a detrimental effect on the absorption of MW radiation. 2 Refs.

31/7/10 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0011029215 BIOSIS NO.: 199799663275
Ultrasonic nebulisers **for pulmonary drug delivery**
AUTHOR: Taylor Kevin M G (Reprint); McCallion Orla N M
AUTHOR ADDRESS: Cent. Material Sci., Sch. Pharmacy, Univ. London, 29/39 Brunswick Square, London WC1N 1AX, UK**UK
JOURNAL: International Journal of Pharmaceutics (Amsterdam) 153 (1): p 93-104 1997 1997
ISSN: 0378-5173
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: **Nebulizers** are widely used to **generate** therapeutic **aerosols** for inhalation therapy. In this paper the factors determining **aerosol** size and drug output from ultrasonic **nebulisers** are discussed. The mechanism of droplet formation is described in relation to capillary wave production on the surface of the **liquid** being **atomized** and the implosion of cavitation bubbles near its surface. There are many commercially available ultrasonic **nebulisers**, and their design is a major factor determining aerosol characteristics and output, in particular the operating frequency of the devices (usually 1-3 MHz), the presence of a fan to assist droplet output and the positioning of baffles. The size of aerosols produced and the rate of fluid output is often larger than comparable jet nebulisers. They also have less tendency to increase the concentration of dissolved solutes. However, the residual or 'dead' volume of fluid is usually larger. The physicochemical properties of fluids for nebulization significantly affect nebulizer performance. Viscosity is particularly important, with an increased viscosity

increasing aerosol size but reducing output. Fluids of high viscosity cannot be efficiently atomized. Although most preparations for nebulization are solutions, some suspension formulations are also commercially available. Suspensions are generally less efficiently delivered by ultrasonic than jet nebulisers with an inverse relationship between the size of suspended particles and their output. During use, the temperature of fluids in the reservoir of ultrasonic nebulisers increases. This may result in the degradation of heat sensitive materials. However, potentially heat sensitive such as proteins and liposomes have been successfully delivered using such devices.

```
File  98:General Sci Abs/Full-Text 1984-2004/May
File   9:Business & Industry(R) Jul/1994-2004/May 13
File  16:Gale Group PROMT(R) 1990-2004/May 14
File 160:Gale Group PROMT(R) 1972-1989
File 148:Gale Group Trade & Industry DB 1976-2004/May 14
File 621:Gale Group New Prod.Annou.(R) 1985-2004/May 13
File 149:TGG Health&Wellness DB(SM) 1976-2004/May W1
File 636:Gale Group Newsletter DB(TM) 1987-2004/May 14
File 441:ESPICOM Pharm&Med DEVICE NEWS 2004/May W2
File 369:New Scientist 1994-2004/May W2
File 370:Science 1996-1999/Jul W3
Set     Items   Description
S1      35346   AEROSOLIS? OR AEROSOLIZ? OR VOLATILIZ? OR VOLATILIS? OR VA-
             PORIZ? OR VAPORIS? OR VAPOURIZ? OR VAPOURIS? OR NEBULIZ? OR N-
             EBULIS? OR ATOMIZ? OR ATOMIS? OR (GENERAT? OR PRODUCE? ? OR P-
             RODUCING OR PRODUCTION)(1N)AEROSOL? ?
S2      25466   (FLOW OR FLUID)()PASSAGE? OR CAPILLARY OR CAPILLARIES
S3     764422   HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4     369752   CHAMBER? ? OR SLEEVE? OR SHEATH OR SHEATHS
S5     182902   DROPLET? ? OR PARTICLE? ? OR AEROSOL? ?
S6    2411595   SIZE? ? OR DIAMETER? ? OR DIAMETRE? ? OR MMAD
S7     996160   LIQUID? ? OR FLUID? ? OR MEDICAMENT? ? OR MEDICAT?
S8     188699   ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR INFLAMMAT-
             OR???) OR ANTICHOLINERGIC? ? OR HORMONE? ?
S9     138177   ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSSIVE? ? OR DIU-
             RETIC? ? OR BRONCHODILATOR? ?
S10        79   S1(S)S2(S)S3
S11         7   S4(S)S10
S12         7   RD S11 (unique items)
S13         7   Sort S12/ALL/PD,A
S14     22213   S5(1N)S6
S15         0   S10(S)S14 NOT S11
S16         8   S10(S)S6 NOT S11
S17         8   RD (unique items)
S18         8   Sort S17/ALL/PD,A
S19         1   S10(S)S8:S9
S20        55   S10(S)S7
S21        13   S20(S)S5:S6
S22         5   S21 NOT (S11 OR S16)
S23         5   RD (unique items)
S24        40   S20 NOT (S11 OR S16 OR S21)
S25        34   RD (unique items)
S26         3   S25/2003:2004
S27        31   S25 NOT S26
S28        31   Sort S27/ALL/PD,A

 13/8/1     (Item 1 from file: 160)
DIALOG(R)File 160:(c) 1999 The Gale Group. All rts. reserv.
01570820
FIRST TRULY UNIVERSAL INJECTOR FOR CAPILLARY GAS CHROMOTOGRAPHY - AVAILABLE
    FROM HBI.
January, 1987
COMPANY:
    *Haake Buchler Instruments
PRODUCT: *Automatic Chromatographic Samplers (3832637)
EVENT:   *Product Design & Development (33)
```

COUNTRY: *United States (1USA)

13/8/3 (Item 3 from file: 636)
DIALOG(R)File 636:(c) 2004 The Gale Group. All rts. reserv.
01412347 Supplier Number: 41837962 (USE FORMAT 7 FOR FULLTEXT)
Method and Apparatus for Introduction of Liquid Effluent into Mass Spectrometer and Other Gas-Phase or Particle Detectors
Feb, 1991
Word Count: 256
PUBLISHER NAME: Business Communications Company, Inc.
INDUSTRY NAMES: BUSN (Any type of business); CHEM (Chemicals, Plastics and Rubber)

13/8/5 (Item 5 from file: 636)
DIALOG(R)File 636:(c) 2004 The Gale Group. All rts. reserv.
03253161 Supplier Number: 46674992 (USE FORMAT 7 FOR FULLTEXT)
Chromatofast Moves to Higher Speed
Sept 1, 1996
Word Count: 475
PUBLISHER NAME: Business Communications Company, Inc.
INDUSTRY NAMES: BUSN (Any type of business); CHEM (Chemicals, Plastics and Rubber)

13/8/6 (Item 6 from file: 16)
DIALOG(R)File 16:(c) 2004 The Gale Group. All rts. reserv.
09654832 Supplier Number: 83736432 (USE FORMAT 7 FOR FULLTEXT)
Vapor chamber technology. (Enclosures).(Thermacore Inc.)(Brief Article)
Feb, 2002
Word Count: 134
PUBLISHER NAME: Action Communications, Inc.
COMPANY NAMES: *Thermacore Inc.
EVENT NAMES: *330 (Product information)
GEOGRAPHIC NAMES: *1USA (United States)
PRODUCT NAMES: *3674195 (Thermoelectric Coolers (Chip))
INDUSTRY NAMES: ELEC (Electronics); ENG (Engineering and Manufacturing)
SIC CODES: 3674 (Semiconductors and related devices)
NAICS CODES: 334413 (Semiconductor and Related Device Manufacturing)
SPECIAL FEATURES: COMPANY

18/8/3 (Item 3 from file: 160)
DIALOG(R)File 160:(c) 1999 The Gale Group. All rts. reserv.
01803979
NEW FLUID HEATER OFFERS GREATER TEMPERATURE CONTROL ACCURACY FOR HIGH VISCOSITY HIGH PERFORMANCE COATINGS
October 16, 1987
COMPANY: *Graco DUNS: 00-625-3223 TICKER: GRAC (NYSE) CUSIP: 384109
PRODUCT: *Heaters, Condensers, Etc (3443150)
EVENT: *Product Design & Development (33)
COUNTRY: *United States (1USA)

23/8/4 (Item 1 from file: 149)
DIALOG(R)File 149:(c) 2004 The Gale Group. All rts. reserv.
01071723 SUPPLIER NUMBER: 03480594 (USE FORMAT 7 OR 9 FOR FULL TEXT)
High-performance liquid chromatography-mass spectrometry.
1984
WORD COUNT: 4628 LINE COUNT: 00446

SPECIAL FEATURES: illustration; chart; photograph; graph
DESCRIPTORS: Scientific equipment and supplies--Innovations; Liquid chromatography--Technique; Mass spectrometry--Usage

23/8/5 (Item 1 from file: 636)
DIALOG(R)File 636:(c) 2004 The Gale Group. All rts. reserv.
01412367 Supplier Number: 41837982 (USE FORMAT 7 FOR FULLTEXT)
Vaporization Device for Continuous Introduction of Liquids Into a Mass Spectrometer
Feb, 1991
Word Count: 280
PUBLISHER NAME: Business Communications Company, Inc.
INDUSTRY NAMES: BUSN (Any type of business); CHEM (Chemicals, Plastics and Rubber)

28/8/8 (Item 8 from file: 148)
DIALOG(R)File 148:(c)2004 The Gale Group. All rts. reserv.
02175683 SUPPLIER NUMBER: 03448109 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fluids, conductors, and conditioners. (1984 Fluid Power Reference Issue)
Sept 27, 1984
WORD COUNT: 14163 LINE COUNT: 01157
SPECIAL FEATURES: illustration; table
INDUSTRY CODES/NAMES: METL Metals, Metalworking and Machinery; ELEC Electronics; ENG Engineering and Manufacturing
DESCRIPTORS: Tubes--Fluid dynamics; Fluid power technology--Equipment and supplies; Hydraulic fluids--Usage; Hydraulic control--Equipment and supplies
SIC CODES: 3494 Valves and pipe fittings, not elsewhere classified

28/8/11 (Item 11 from file: 148)
DIALOG(R)File 148:(c)2004 The Gale Group. All rts. reserv.
02481108 SUPPLIER NUMBER: 03940990 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fluids, conductors, and conditioners. (1985 Fluid Power Reference Issue)
Sept 19, 1985
WORD COUNT: 12662 LINE COUNT: 01022
SPECIAL FEATURES: illustration; table
INDUSTRY CODES/NAMES: METL Metals, Metalworking and Machinery; ELEC Electronics; ENG Engineering and Manufacturing
DESCRIPTORS: Pneumatic machinery--Lubrication and lubricants; Hose--Directories; Heat exchangers--Directories; Compressed air--Equipment and supplies; Tubes--Varieties; Hydraulic fluids--Directories; Fluidic devices--Design and construction; Drying agents--Directories; Pipe--Varieties; Hose-couplings--Directories; Pipe-fittings--Directories; Filters and filtration--Directories
SIC CODES: 2869 Industrial organic chemicals, not elsewhere classified; 3599 Industrial machinery, not elsewhere classified

28/8/13 (Item 13 from file: 148)
DIALOG(R)File 148:(c)2004 The Gale Group. All rts. reserv.
03322360 SUPPLIER NUMBER: 05219073 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fluids, conductors, and conditioners. (fluid power)
Sept 17, 1987
WORD COUNT: 12164 LINE COUNT: 00977
SPECIAL FEATURES: illustration; photograph; graph; chart; table
INDUSTRY CODES/NAMES: METL Metals, Metalworking and Machinery; ELEC Electronics; ENG Engineering and Manufacturing

DESCRIPTORS: Fluid power technology--Equipment and supplies; Hydraulic machinery--Design and construction
SIC CODES: 3569 General industrial machinery, not elsewhere classified; 3599 Industrial machinery, not elsewhere classified

28/8/15 (Item 15 from file: 148)
DIALOG(R)File 148:(c)2004 The Gale Group. All rts. reserv.
03648843 SUPPLIER NUMBER: 06683978 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fluids, conductors, and conditioners. (includes related articles) (fluid power reference issue)
Sept 15, 1988
WORD COUNT: 16182 LINE COUNT: 01306
SPECIAL FEATURES: illustration; photograph; graph; table; chart
INDUSTRY CODES/NAMES: METL Metals, Metalworking and Machinery; ELEC Electronics; ENG Engineering and Manufacturing
DESCRIPTORS: Pipe--Design and construction; Fluid power technology--Equipment and supplies; Hose--Design and construction; Tubes--Design and construction
SIC CODES: 3492 Fluid power valves & hose fittings; 2992 Lubricating oils and greases

28/8/18 (Item 18 from file: 148)
DIALOG(R)File 148:(c)2004 The Gale Group. All rts. reserv.
03927975 SUPPLIER NUMBER: 07734063 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fluids, conductors, and conditioners. (Power and Motion Control volume)
June, 1989
WORD COUNT: 19566 LINE COUNT: 01570
SPECIAL FEATURES: illustration; graph; table
INDUSTRY CODES/NAMES: METL Metals, Metalworking and Machinery; ELEC Electronics; ENG Engineering and Manufacturing
DESCRIPTORS: Hose-couplings--Design and construction; Tubes--Design and construction; Fluid power technology--Equipment and supplies; Hose--Design and construction; Hydraulic fluids--Design and construction
SIC CODES: 3429 Hardware, not elsewhere classified; 3052 Rubber & plastics hose & belting; 2911 Petroleum refining

28/8/22 (Item 22 from file: 16)
DIALOG(R)File 16:(c) 2004 The Gale Group. All rts. reserv.
03086376 Supplier Number: 44204407 (USE FORMAT 7 FOR FULLTEXT)
Marketplace: Novel Heat-Transfer Cylinder
Nov, 1993
Word Count: 205
PUBLISHER NAME: University R&D Opportunities, Inc.
EVENT NAMES: *310 (Science & research)
GEOGRAPHIC NAMES: *1U7TX (Texas)
PRODUCT NAMES: *8519200 (Energy Research & Development)
INDUSTRY NAMES: BUSN (Any type of business); ENG (Engineering and Manufacturing)
NAICS CODES: 54171 (Research and Development in the Physical, Engineering, and Life Sciences)

```
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200430
File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)
File 371:French Patents 1961-2002/BOPI 200209
Set     Items   Description
S1     110606   AEROSOLIS? OR AEROSOLIZ? OR VOLATILIZ? OR VOLATILIS? OR VA-
             PORIZ? OR VAPORIS? OR VAPOURIZ? OR VAPOURIS? OR NEBULIZ? OR N-
             EBULIS? OR ATOMIZ? OR ATOMIS? OR (GENERAT? OR PRODUCE? ? OR P-
             RODUCING OR PRODUCTION)(1N)AEROSOL? ?
S2      86090   (FLOW OR FLUID)()PASSAGE? OR CAPILLARY OR CAPILLARIES
S3    2584165   HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4    1069634   CHAMBER? ? OR SLEEVE? OR SHEATH OR SHEATHS
S5     661610   DROPLET? ? OR PARTICLE? ? OR AEROSOL? ?
S6    1530813   SIZE? ? OR DIAMETER? ? OR DIAMETRE? ? OR MMAD
S7    1930002   LIQUID? ? OR FLUID? ? OR MEDICAMENT? ? OR MEDICAT?
S8      60885   ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR INFLAMMAT-
             OR???) OR ANTICHOLINERGIC? ? OR HORMONE? ?
S9      44389   ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSSIVE? ? OR DIU-
             RETIC? ? OR BRONCHODILATOR? ?
S10       308   S1 AND S2 AND S3 AND S4
S11    188160   S5(1N)S6
S12        10   S10 AND S11
S13         9   S12 AND S7:S9
S14     32138   S1/TI
S15         0   S10 AND S15
S16       100   S10 AND S14
S17        65   S2(S)S3(S)S4 AND S16
S18         9   S6 AND S17
S19         6   S18 NOT S13
S20         1   S12 NOT S13 [not relevant]
S21        40   (S17 AND S7:S9) NOT (S12 OR S13 OR S18)
S22         0   S8:S9 AND S21

 13/26,TI/9     (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004  Thomson Derwent. All rts. reserv.
008137480
WPI Acc No: 1990-024481/199004
  Smoking article with heat source - producing aerosol from flavour
  bed, in porous ceramic cylindrical housing

 13/34/3     (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004  Thomson Derwent. All rts. reserv.
014205438     **Image available**
WPI Acc No: 2002-026135/200203
   Aerosol generator for medicament administration, comprises flow
   passage , heater , and electrically conductive material
Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N); BYRON P R (BYRO-I);
  HINDLE M (HIND-I)
Inventor: BYRON P R; HINDLE M
Number of Countries: 097  Number of Patents: 006
Patent Family:
Patent No     Kind   Date     Applicat No    Kind   Date     Week
WO 200181182   A2  20011101  WO 2001US40597  A   20010425  200203  B
AU 200159804   A   20011107  AU 200159804    A   20010425  200219
EP 1276672     A2  20030122  EP 2001933371   A   20010425  200308
```

```
                              WO 2001US40597  A   20010425
TW 500614       A   20020901  TW 2001109628   A   20010423  200334
JP 2003530980   W   20031021  JP 2001578291   A   20010425  200373
                              WO 2001US40597  A   20010425
US 20040016427  A1  20040129  US 2000560510   A   20000427  200413
                              US 2003394654   A   20030324
Priority Applications (No Type Date): US 2000560510 A 20000427; US
  2003394654 A 20030324
Patent Details:
Patent No  Kind Lan Pg   Main IPC    Filing Notes
WO 200181182  A2 E  53 B65D-000/00
   Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
   CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS
   JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL
   PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
   Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
   IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
AU 200159804  A        B65D-000/00   Based on patent WO 200181182
EP 1276672    A2 E     B65D-001/00   Based on patent WO 200181182
   Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
   LI LT LU LV MC MK NL PT RO SE SI TR
TW 500614     A        A61M-015/00
JP 2003530980 W     66 A61M-011/00   Based on patent WO 200181182
US 20040016427 A1       A61M-015/00   Cont of application US 2000560510
Abstract (Basic): WO 200181182 A2
        NOVELTY - An aerosol generator comprises a flow passage
    having an open end, a heater (27), and an electrically conductive
    material at the first open end of the flow passage . The heater
    increases the temperature of the flow passage to volatilize
    material in the flow passage so that the volatilized material
    expands out of the open end of the flow passage to form an aerosol.
        DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a
    method for generating an aerosol by supplying a material in liquid
     form to a flow passage (23), and heating the material to
    volatilize the supplied material. The solid particles are suspended in
    solution in the material. It is forced out of the open end (25) of the
    flow passage as the volatilized solution expands so that the
    aerosol includes condensed particles of the solution and solid
    particles. The condensed particles of the solution and solid particles
    coalesce.
        USE - For medicament administration, e.g. to lungs of a person
    suffering from asthma or emphysema.
        ADVANTAGE - The inventive aerosol generator provides minimized
    loss of the aerosol and to the mouth and throat of the patient. It
    improves the particle size distribution of the aerosol thus the
    deposition of medicament in the lungs is also improved.
        DESCRIPTION OF DRAWING(S) - The figure is a schematic view of an
    aerosol generator .
         Flow passage (23)
        Open end (25)
         Sleeve (26)
         Heater (27)
        pp; 53 DwgNo 1/14
Technology Focus:
        TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred
    Components: The flow passage is a portion of a fused silica
```

capillary tube. It is bounded by an electrically conducting material (preferably stainless steel). The **aerosol generator** has a spacer **chamber** connected to the open end of the **flow passage** so that the aerosol passes through the spacer **chamber** and exits out of the **chamber** . The aerosol particle mass median **aerosol diameter** increases the spacer **chamber** . Preferred Material: The **volatilized** material mixes with ambient air to form the aerosol. It comprises a solute component and a **liquid** vehicle component. Preferred Parameters: The **flow passage** has an internal diameter of approximately 0.05-0.53 (preferably approximately 0.1) mm. The aerosol particle mass median **aerosol diameter** exiting the spacer **chamber** is larger than the mass median **aerosol diameter** formed by the **volatilized** material as it expands of the first open end of the **flow passage** . The mass **aerosol diameter** of the **volatilized** material is at most 0.5 (preferably greater than 1) mum. The **aerosolized** solid particles are different or the same mass median **aerosol diameter** as the **aerosolized** solution.

METALLURGY - Preferred Components: The electrically conductive material comprises a metal **sleeve** (26) (preferably stainless steel).

ORGANIC CHEMISTRY - Preferred Materials: The **liquid** component is triethylene glycol (preferably propylene glycol). The solute component is budesonide.

Derwent Class: B01; B07; P34; Q32
International Patent Class (Main): A61M-011/00; A61M-015/00; B65D-000/00; B65D-001/00
International Patent Class (Additional): A61K-009/72; A61K-031/573; A61K-047/10; A61M-016/00

13/34/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
012533727 **Image available**
WPI Acc No: 1999-339833/199929
Evaporation of liquid **into gas stream**
Patent Assignee: SCHMAEH M (SCHM-I)
Inventor: SCHMAEH M
Number of Countries: 025 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 923985	A1	19990623	EP 98123746	A	19981214	199929	B
DE 19755643	A1	19990624	DE 1055643	A	19971215	199931	
DE 19755643	C2	20010503	DE 1055643	A	19971215	200125	
EP 923985	B1	20010919	EP 98123746	A	19981214	200155	
DE 59801508	G	20011025	DE 501508	A	19981214	200171	
			EP 98123746	A	19981214		

Priority Applications (No Type Date): DE 1055643 A 19971215
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 923985	A1	G	15	B01F-003/02	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
DE 19755643	A1			B01D-001/16	
DE 19755643	C2			B01D-001/16	
EP 923985	B1	G		B01F-003/02	
Designated States (Regional): DE DK FR GB IT NL SE					
DE 59801508	G			B01F-003/02	Based on patent EP 923985

Abstract (Basic): EP 923985 A1

NOVELTY - **Liquid** is introduced through a **capillary** as a fine spray and is carried by the gas into a **heated** mixing **chamber** where it is evaporated.

DETAILED DESCRIPTION - The **liquid** is pumped through a **capillary** (22) with a bore diameter of less than 250 mum into the gas stream, which enters a nozzle (26) through a passage (24). The nozzle can move axially to alter the spray pattern to reduce the **droplet size** from the exit of the **capillary** to the walls by a factor of 10. The walls (12) and the lid (16) are **heated** by elements (34,36) to evaporate the aerosol into a vapor/gas mixture that leaves at an exit (30). The process is controlled by temperature sensors (32) and pressure sensors disposed about the base of the vessel. Control is provided by moving the nozzle (16) and hence altering the size of gap (28) around the **capillary** . Control is alternatively offered by a number of spray devices (22,26), each with different delivery rates, in the same mixing **chamber** .

USE - For the preparation of a **liquid** vapor/gas mixture for subsequent analysis, and particularly for the **vaporization** of a solution with a very low concentration of mercuric chloride.

ADVANTAGE - The composition of the mixture can be closely controlled. The equipment is suitable for solutions with very low concentrations of materials to be analyzed. Energy and constructional requirements are modest.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic section of the equipment.

Walls (12)
Lid (16)
Capillary (22)
Gas inlet (24)
Nozzle (26)
Mixture exit (30)
Temperature sensor (32)
Heating elements (34,36)
pp; 15 DwgNo 1/5

Derwent Class: J01; J02; S02; S03
International Patent Class (Main): B01D-001/16; B01F-003/02
International Patent Class (Additional): B01D-003/16; G01N-001/28

13/34/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
010802455 **Image available**
WPI Acc No: 1996-299408/199630

Appts. for analysing solutes in soln. - having ultrasonic nebuliser **for converting liq. to aerosol, conduit for introducing liq., means for converting to solid aerosol, skimmer, and ionisation and analysis means**

Patent Assignee: WATERS INVESTMENTS LTD (WATE-N)
Inventor: GABELER S C; JARRELL J A; TOMANY M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5526682	A	19960618	US 91694703	A	19910502	199630	B
			US 92987863	A	19921209		
			US 94245398	A	19940518		

Priority Applications (No Type Date): US 92987863 A 19921209; US 91694703 A

19910502; US 94245398 A 19940518
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 5526682 A 9 G01N-030/72 CIP of application US 91694703
Cont of application US 92987863
Abstract (Basic): US 5526682 A
The appts. for analysing a liq. sample consisting of the effluent of a liq. chromatography column, comprises: (a) an ultrasonic **nebuliser** capable of vibrating at a frequency of 50-760 kHz to form **capillary** waves in a liq. which are fractured to form a liq. aerosol; (b) a conduit for introducing the liq. sample to be converted to the liq. aerosol, axially into the **nebuliser** ; (c) means for converting the liq. aerosol to a solid aerosol by evaporating solvent of the liq. aerosol with a **heated** gas stream at at least atmos. pressure, which surrounds and contacts the liq. aerosol; (d) a bent **chamber** for capturing liq. particles larger than the solid aerosol, positioned after the means for converting the liq. to solid aerosol; (e) a skimmer for sepg. the solid aerosol from the evaporated solvent; (f) means to ionise constituent mols. of the solid **aerosol producing** an ion beam; and (g) means for analysing the ion beam.
Also claimed is a process for analysing a liq. sample.
USE - The appts. is used for analysing solutes in soln. by detecting the solute in the **nebuliser** .
ADVANTAGE - The **particle size** distribution of the **nebuliser** is relatively insensitive to liq. density and liq. surface tension.
Dwg.1/5
Derwent Class: J04; S03
International Patent Class (Main): G01N-030/72
International Patent Class (Additional): G01N-001/00

13/34/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
009247307 **Image available**
WPI Acc No: 1992-374724/199246
Analysing solutes in sample soln. by atomising **soln. - using ultrasonic** nebuliser **forming** capillary **waves on liq. surface forming liq. aerosol, dried to solid aerosol**
Patent Assignee: WATERS INVESTMENTS LTD (WATE-N); MILLIPORE CORP (MIFI)
Inventor: GABELER S C; JARRELL J A; TOMANY M
Number of Countries: 004 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 512394	A2	19921111	EP 92107307	A	19920429	199246	B
JP 5180802	A	19930723	JP 92137625	A	19920501	199334	
EP 512394	A3	19930120	EP 92107307	A	19920429	199346	
EP 512394	B1	19970305	EP 92107307	A	19920429	199714	
DE 69217703	E	19970410	DE 617703	A	19920429	199720	
			EP 92107307	A	19920429		

Priority Applications (No Type Date): US 91694703 A 19910502
Cited Patents: No-SR.Pub; DE 3913763; US 4570068; US 4883958; US 4980057
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
EP 512394 A2 E 10 G01N-030/72
Designated States (Regional): DE FR GB
JP 5180802 A 9 G01N-027/62

EP 512394 B1 E 11 G01N-030/72
Designated States (Regional): DE FR GB
DE 69217703 E G01N-030/72 Based on patent EP 512394
EP 512394 A3 G01N-030/72
Abstract (Basic): EP 512394 A

Method, and appts. for analysing solutes in a sample soln. by **atomising** the soln. and detecting the solute in the **atomised** particles, partic. the use of an **atomiser** using ultrasonic excitation to form a standing wave on a liq. surface, the **particle size** distribution of the **atomised** liq. being relatively insensitive to liq. density and liq. surface tension, the process for analysing a liq. sample comprises (a) introducing the sample axially into an ultrasonic **nebuliser** , vibrating the **nebuliser** to form **capillary** waves on the surface of the liq. sample which are fractured to frm a liq. aerosol; (b) **heating** the liq. aerosol to covert the liq. aerosol to a solid aerosol; (c) sepg. evaporated solvent from the solid aerosol; and (d) analysing the solid aerosol.

ADVANTAGE - The system has relative independence of sensitivity of response to mobile phase compsn. and flow rate this independence being achieved without the need for **nebuliser** optimisation as flow rate or compsn. are varied, the system operating at flow rates within the range of microbore and **capillary** liq. chromographs.

Dwg.1/5

Abstract (Equivalent): EP 512394 B

A system for analyzing a **liquid** sample (10) comprising an effluent of a **liquid** chromatography column which comprises, an ultrasonic **nebu**lizer (14) capable of vibration at a frequency between about 50 kHz and kHz to form a **liquid** aerosol; and conduit means (12) for introducing said sample (10) axially into said **nebulizer** thereby to be converted to said **liquid** aerosol characterized by further comprising: means (18,20,22) for converting said liq. aerosol to a solid aerosol by evaporating vent of said **liquid** aerosol with a **heated** stream; skimmer means for separating said solid aerosol from said evaporated solvent; means (58) to ionize constituent molecule said solid **aerosol** thus **producing** an ion beam means (94,95) for analyzing said ion beam wherein; the **heat** gas stream is maintained at a pressure of at least atmospheric pressure which surrounds and contacts said **liquid** aerosol; and a bent **chamber** (33) for capturing **liquid** particles larger than said solid aerosol is positioned after said means (18,20,22) for converting said **liquid** aerosol to a solid aerosol.

Dwg.1/5

Derwent Class: J04; S03; V05
International Patent Class (Main): G01N-027/62; G01N-030/72
International Patent Class (Additional): H01J-049/04; H01J-049/26

13/34/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008939398 **Image available**
WPI Acc No: 1992-066667/199209
Ultrasonic generator for micro-droplet prod. - has ultrasonic vibrating surface fed with liq. through intermediate chamber **and sub-millimetre channels**
Patent Assignee: DYNAMAD SARL (DYNA-N); IPS IND POUDRES SPHERIQUES SA (IPSI-N); DYNAMAD (DYNA-N)

Inventor: BECHET L
Number of Countries: 017 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 472479	A	19920226	EP 91420290	A	19910808	199209 B
FR 2665849	A	19920221	FR 9010608	A	19900820	199217
CA 2049094	A	19920221				199219
US 5198157	A	19930330	US 91747314	A	19910820	199315
EP 472479	B1	19941228	EP 91420290	A	19910808	199505
DE 69106278	E	19950209	DE 606278	A	19910808	199511
			EP 91420290	A	19910808	
ES 2065655	T3	19950216	EP 91420290	A	19910808	199513
KR 183025	B1	19990415	KR 9114354	A	19910820	200048
CA 2049094	C	20021015	CA 2049094	A	19910813	200282

Priority Applications (No Type Date): FR 9010608 A 19900820
Cited Patents: DE 2537772; DE 3036721; EP 11269; EP 202381; EP 308933
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 472479	A				
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
FR 2665849	A		16		
US 5198157	A		7	B29B-009/10	
EP 472479	B1	F	9	B05B-017/06	
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
DE 69106278	E			B05B-017/06	Based on patent EP 472479
ES 2065655	T3			B05B-017/06	Based on patent EP 472479
KR 183025	B1			B01J-002/18	
CA 2049094	C	F		B05B-001/08	

Abstract (Basic): EP 472479 A

The ultrasonic generator for producing micro-droplets of a constant size, e.g. for dispersing an organic or mineral liq. used in medicine or cosmetics has an ultrasonic vibrating surface (11) which **atomises** the liq. fed to it through an intermediate **chamber** (22) which can regulate the flow and/or temp. adjacent to the surface (11). The liq. is fed to the vibrating surface through one or more channels (24) of sub-millimetre cross-section with the flow produced by **capillary** action or by pressure gradient induced by the vibration. The channels open on the vibrating surface at an angle of between 25 and 75 deg.

ADVANTAGE - Improved liq. flow and control of **droplet size** . (8pp Dwg.No.1/3)iz

Abstract (Equivalent): EP 472479 B

An ultrasonic device for the continuous production of microdroplets having a uniform **particle size** distribution, comprising a vibrating surface which by its orthogonal ultrasonic vibratory mode **atomizes** a material in the **liquid** state brought up from the interior of the device by a means of delivery (122,124,126,128,130) characterised in that the material in the **liquid** state is distributed over the vibrating surface (105) by an annular channel or several channels of which one of the dimensions of the flow cross section is of the order of a millimetre or is submillimetric, either from an intermediate flow-regulating and/or **heat** regulating **chamber** /crucible (128) or directly from the said annular channel serving as an intermediate **chamber** /crucible, the said intermediate **chamber** (128) being subjacent to the vibrating surface (105).

Dwg.3/3

Abstract (Equivalent): US 5198157 A

The device comprises a piezoelectric transducer extended by a **heat** regulated concentrator having an end surface defining a vibrating surface for producing an orthogonal ultrasonic vibratory mode. An internal intermediate fluoro regulating **chamber** is disposed with the concentrator beneath the vibrating surface and which holds a material in a liq. state.

The **chamber** acts as a crucible and at least one channel connects the **chamber** to the vibrating surface to permit distribution of the material liq. over the vibrating surface where the vibratory mode **atomises** the material.

USE/ADVANTAGE - Used for continuous prodn. of microdroplets of uniform **particle size** distribution.

Dwg.2/3

Derwent Class: B07; P42; P53
International Patent Class (Main): B01J-002/18; B05B-001/08; B05B-017/06; B29B-009/10
International Patent Class (Additional): B01J-002/02; B22F-009/08

19/26,AU/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
013843901
WPI Acc No: 2001-328114/200134
Atomizer **for spectrometer with flame**-heated **tubular furnace, includes** heated capillary **leading to sample inlet opening, for earlier sample** vaporization

19/26,AU/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
009231328
WPI Acc No: 1992-358748/199244
Injector with vaporisation chamber **for introducing sample into** capillary **gas chromatographic appts. - has** heated chamber **with pierceable septum to seal end of** chamber **and** heat **conducting element removably mounted between septum and** heater **, and extra communicating elements adjacent to septum**

19/26,AU/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
008939294
WPI Acc No: 1992-066563/199209
Smoking article - has flavour aerosol generated **by** heat **transfer to flavour bed from combustion of** heat **source**

19/26,AU/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
007422386
WPI Acc No: 1988-056321/198808
Appts. to vaporise **monomeric resins for capacitor prodn. - has a** capillary **feed above a high-speed rotating glass disc to form a continuous thin stream which is flung against a** vaporising heater

19/7/6 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.

07541656 **Image available**
FLAT PLATE **VAPORIZER**
PUB. NO.: 2003-035494 [JP 2003035494 A]
PUBLISHED: February 07, 2003 (20030207)
INVENTOR(s): CHO KYUNG-IL
AN JIN SOBU
HA BYEOUNG JU
SON SANG-YOUNG
IN KAYO
KANG SUNG-GYU
APPLICANT(s): SAMSUNG ELECTRONICS CO LTD
APPL. NO.: 2002-127519 [JP 2002127519]
FILED: April 26, 2002 (20020426)
PRIORITY: 01 200123227 [KR 200123227], KR (Korea) Republic of, April 28, 2001 (20010428)
02 200219298 [KR 200219298], KR (Korea) Republic of, April 09, 2002 (20020409)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a flat plate **vaporizer** .
SOLUTION: The flat plate **vaporizer** has such a structure as the common **chamber** of a substrate having specified **diameter** and depth for containing refrigerant is sectioned into a **vaporization** cavity region, a **capillary** tube region surrounding the **vaporization** cavity region, and a manifold region surrounding the **capillary** tube region, a wick structure is formed in the **capillary** tube region, and an exhaust means including a section for exhausting vapor phase refrigerant produced in the **vaporization** cavity region to the outside is provided on an upper plate. A small and thin cooler which can be cooled without requiring any external power can be obtained using that evaporator. Since liquid state refrigerant can be isolated from evaporated gas phase refrigerant by the **capillary** tube region, lowering in the fluidity of fluid due to mixture of gas and liquid can be suppressed efficiently and **heat** exchanging characteristics can be enhanced significantly.
COPYRIGHT: (C)2003,JPO

21/26,TI/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
015525159
WPI Acc No: 2003-587309/200355
Vaporization **injection of** liquid **sample comprises drawing sample vapor from** vaporization chamber **into** capillary **by local action of volume contraction caused by recondensation of solvent vapor in** capillary

21/26,TI/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
014328273
WPI Acc No: 2002-148976/200220
Device for continuously vaporizing **small amounts of mineral oil products comprises** heated vaporizer chamber , **protruding** capillary **with opening for** liquid **to reach** vaporizer chamber , **and** atomizing **nozzles**

21/26,TI/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

014284881
WPI Acc No: 2002-105582/200214
Cryotherapy system for e.g. treating mammalian injuries has heat **exchanger for** volatilizing **refrigerant, sensor for sensing physiological property of mammal, and control that alters refrigerant flow rate based on sensor output**

21/26,TI/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
014242295
WPI Acc No: 2002-062995/200209
Substrate holding arrangement for coating devices comprises a tempering device and a holder having an inner chamber **system with a** chamber **region containing a** fluid **which** vaporizes **in a partial region and condenses in another region**

21/26,TI/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
011627222
WPI Acc No: 1998-044350/199805
Vaporiser **for growing dielectric and ferroelectric films for IC manufacture - comprises** vaporising **passage composed of pair of opposing walls separated by minute spacing,** liquid **feed entrance,** vaporised **feed exit and** heater **for walls**

21/26,TI/15 (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
010352309
WPI Acc No: 1995-253623/199533
Method for atomic absorption analysis - using adjusted mixture of aerosol with inert gas plug hydrogen in atomiser

21/26,TI/16 (Item 16 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
010178867
WPI Acc No: 1995-080120/199511
Operation of heat **tube - comprises applying** heat **to end of tube,** vaporising heat **transfer** fluid **within tube, moving vapour under differential pressure and condensing etc.**

21/26,TI/17 (Item 17 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
009548558
WPI Acc No: 1993-242107/199330
Gas trap appts. for gaseous fraction mixtures - includes gas column chamber **into which tubular column e.g.** capillary **tube extends, cooling** chamber **contg coolant to solidify-liquefy gas sample and** heater **to** vaporise **solid-** liquid

21/26,TI/19 (Item 19 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

008489187
WPI Acc No: 1990-376187/199050
Vaporising **tube for sample** liquids **in mass spectrometry - encloses** capillary **in which sample** liquid **flows and is** vaporised **by** heat **from vapour condensing on** capillary **surface**

21/26,TI/20 (Item 20 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
008187518
WPI Acc No: 1990-074519/199010
Simulated smoking article - has porous substrate with aerosol - generating **substance in** sleeve **downstream of capsule**

21/26,TI/21 (Item 21 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
008137483
WPI Acc No: 1990-024484/199004
Smoking article with heat **source** producing aerosol **flavour bed - where hot air from combustion source enters flavour bed, releases aerosol which is cooled and filtered**

21/26,TI/24 (Item 24 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
007317044
WPI Acc No: 1987-314051/198745
Appts. for prodn. of ion vapour from liq. sample - useful for vaporising **eluants from liq. chromatograph for mass spectrometry etc.**

21/26,TI/25 (Item 25 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
007303251
WPI Acc No: 1987-300258/198743
Ultrasonic vibrating liquid **monomer** atomiser - **has** heated **flash** vaporisation chamber **for vacuum deposition of capacitor dielectric layers**

21/26,TI/26 (Item 26 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
004702610
WPI Acc No: 1986-205952/198632
Appts. for on line uninterrupted high performance chromatography - has vaporising chamber **between** liquid **and following columns**

21/26,TI/29 (Item 29 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
003265204
WPI Acc No: 1982-B4411E/198206
Heat **driven positive displacement pump - has diaphragm and separator connected by rod and condensation** chamber **connects to** vaporiser chamber **through** capillary **material**

21/26,TI/30 (Item 30 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
003119278
WPI Acc No: 1981-M9329D/198150
Ion vapour source for liq. mass spectrometry - includes heated **probe surface upon which sample particles impinge and** vaporise

21/26,TI/34 (Item 34 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
001526389
WPI Acc No: 1976-J9325X/197641
Surgical cutting instrument - has heat **distributor near cutting edge and** chamber **containing** vaporisable **material**

21/26,TI/36 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.
05428413
SPECIMEN **VAPORIZING CHAMBER**

21/26,TI/37 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.
03344979
CONDENSING **VAPORIZER**

21/26,TI/38 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.
03092974
CONDENSATION **VAPORIZER**

21/7,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
015854192 **Image available**
WPI Acc No: 2004-012024/200401
Aerosol generator for controlled vaporization and/or condensation of drug formulation, includes reservoir comprising liquid stored in chamber bladder and free weight, and flow passage defined by elastomeric member with depressions
Patent Assignee: BROOKMAN D L (BROO-I); GROLLIMUND G E (GROL-I); **NICHOLS W A (NICH-I)**; SMITH U (SMIT-I); **CHRYSALIS TECHNOLOGIES INC (CHRY-N)**
Inventor: BROOKMAN D L; GROLLIMUND G E; NICHOLS W A; SMITH U
Number of Countries: 103 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200395005	A1	20031120	WO 2003US12065	A	20030418	200401 B
US 20040025865	A1	20040212	US 2002379025	P	20020510	200412
			US 2003418101	A	20030418	

Priority Applications (No Type Date): US 2002379025 P 20020510; US 2003418101 A 20030418
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes

WO 200395005 A1 E 65 A61M-011/00
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
US 20040025865 A1 A61M-011/00 Provisional application US 2002379025
Abstract (Basic): WO 200395005 A1

NOVELTY - An **aerosol generator** comprises a reservoir comprising a **chamber** , a **liquid** stored in a bladder in the **chamber** , and a free weight that compresses the bladder; and a **flow passage** defined by an elastomeric member comprising at least a first depression defining a metering **chamber** and containing a volume of **liquid** , and/or comprising three depressions defining a metering **chamber** and inlet and outlet valve, respectively.

DETAILED DESCRIPTION - An **aerosol generator** comprises a reservoir (106) containing a **liquid** , a **flow passage** in **fluid** communication with the reservoir, and a **heater** (130) arranged to **heat** the **liquid** in the **flow passage** to produce a vapor. The vapor mixes with air to **produce** an **aerosol** . The reservoir comprises a **chamber** , a **liquid** stored in a bladder in the **chamber** , and a free weight that compresses the bladder so that the **liquid** can be subjected to constant pressure. It is **removably attachable** to a **fluid** delivery assembly of the **aerosol generator** . The **flow passage** is defined by an elastomeric member comprising at least a first depression defining a metering **chamber** and containing a volume of **liquid** ; and/or defined by an elastomeric member comprising a first depression defining a metering **chamber** , a second depression defining an inlet valve, and a third depression defining an outlet valve.

USE - For **generating aerosol** for controlled **vaporization** and/or condensation of drug formulation.

ADVANTAGE - The invention allows consistent delivery of precise doses of **fluid** to the **capillary** passage, quickly delivers aerosol to the uses as the user inhales on the mouthpiece, provides efficient use of the user's lung capacity, **produces aerosols** with high number concentrations, can be miniaturized to a hand-held portable device with considerable potential for the targeted delivery of drugs to the deep lung

DESCRIPTION OF DRAWING(S) - The figure shows components of an **aerosol generator** .

Reservoir (106)
Fluid delivery assembly (110)
Drive assembly (112)
Control electronics (120)
Switch (128)
Heater (130)
Mouthpiece (134)
Outlet (144)
pp; 65 DwgNo 3/22

Derwent Class: B07; P34; P35; Q73
International Patent Class (Main): A61M-011/00
International Patent Class (Additional): A61M-015/00; A61M-016/00; A62B-007/10; F23D-011/00

Technology Focus:
... Preferred Component: The generator also includes **capillary** passage in **fluid** communication with the metering **chamber** , a motor, and a camshaft including camshaft lobes associated with the three depressions. The camshaft...
...are operable to close the inlet valve, open the outlet valve, and compress the metering **chamber** during an aerosol delivery cycle in which **liquid** is supplied to the **capillary**0 passage. They open the inlet valve and close the outlet valve during a fill cycle in which **fluid** is supplied to the metering **chamber** . A stepper motor is coupled with the camshaft and rotates the camshaft to open and...
...the elastomeric member during the aerosol delivery cycle. The controller monitors a parameter of the **heater** and delivers power to the **heater** . The generator is a hand-held inhaler including a mouthpiece with an interior supplied with...
...outlet valves after the pressure sensor detects a pressure drop in the mouthpiece interior. The **liquid** is a **liquid medicament** comprising a drug and a carrier. The control electronics (120) control the drive assembly and **fluid** delivery assembly (110) to **generate aerosol** when the user activates a manually activated switch (128).

21/7,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
015692805 **Image available**
WPI Acc No: 2003-754994/200371
Aerosol generator **for use in treatment of respiratory ailment, has preheater that** heats fluid **to generate vapor bubble driving** liquid **into passage for** heating **into gaseous state by using main** heater
Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N); NICHOLS W A (NICH-I)
Inventor: **NICHOLS W; NICHOLS W A**
Number of Countries: 099 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020079377	A1	20020627	US 2000742395	A	20001222	200371	B
US 6491233	B2	20021210	US 2000742395	A	20001222	200371	
WO 200251551	A1	20020704	WO 2001US44810	A	20011130	200371	
AU 2002227038	A1	20020708	AU 2002227038	A	20011130	200427	

Priority Applications (No Type Date): US 2000742395 A 20001222
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020079377	A1		7	B05B-017/04	
US 6491233	B2			B05B-001/24	
WO 200251551	A1	E		B05B-001/24	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 2002227038	A1			B05B-001/24	Based on patent WO 200251551

Abstract (Basic): US 20020079377 A1
NOVELTY - A preheater (28) **heats** the **fluid** in the **chamber** (16) such that a vapor bubble is formed, which expands and drives the **liquid** into the passage (20). A main **heater** (30) **heats** the **liquid**

in the **fluid passage** located on metal, into a gaseous state.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for **aerosol generation** method.
USE - For **generating** aerosols used as **medicated liquids** and powders in the treatment of respiratory ailments and also used in non-medicinal applications such as airfreshner, Insecticides, paints and lubricants.
ADVANTAGE - Provides a vapor driven **aerosol generator producing** an **aerosol** from a **fluid** by **volatilizing** the **fluid** .
DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of the **aerosol generator** .
aerosol generator (10)
chamber (16)
passage (20)
preheater (28)
main **heater** (30)
pp; 7 DwgNo 1/3
Derwent Class: P33; P35; P42; Q73
International Patent Class (Main): B05B-001/24; B05B-017/04
International Patent Class (Additional): A62C-005/02; B05B-001/30; B05B-007/16; B05B-007/32; B05C-001/00; F23D-011/44; F23D-014/28

21/7,K/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
015583859 **Image available**
WPI Acc No: 2003-646016/200361
Aerosol generator **as hand-held inhaler for drug formulation, comprises sensor detecting pressure drop in interior of mouthpiece**
Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N); BROOKMAN D L (BROO-I); GROLLIMUND G E (GROL-I); **NICHOLS** W A (NICH-I); SMITH U (SMIT-I)
Inventor: BROOKMAN D L; GROLLIMUND G E; **NICHOLS** W A; SMITH U
Number of Countries: 102 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200359413	A2	20030724	WO 2003US1048	A	20030115	200361	B
US 20030230303	A1	20031218	US 2002347872	P	20020115	200401	
			US 2003341521	A	20030114		
AU 2003207547	A1	20030730	AU 2003207547	A	20030115	200421	

Priority Applications (No Type Date): US 2003341521 A 20030114; US 2002347872 P 20020115
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200359413	A2	E	44	A61M-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20030230303 A1	A61M-016/00	Provisional application US 2002347872
AU 2003207547 A1	A61M-000/00	Based on patent WO 200359413

Abstract (Basic): WO 200359413 A2
NOVELTY - An **aerosol generator** comprises a mouthpiece (105)

having an outlet through which aerosol is supplied to a user of the **aerosol generator** ; air passage (110) through which air is supplied to an interior of the mouthpiece; and sensor (138) detecting a pressure drop in the interior of the mouthpiece.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for **generating** an **aerosol** with an **aerosol generator** comprising sensing a pressure drop in an interior of the mouthpiece when the user inhales on an outlet of the mouthpiece; supplying aerosol to the interior of the mouthpiece when the pressure drop is detected; and supplying air to the interior of the mouthpiece by opening an air passage when the pressure drop is detected.

USE - As hand-held inhaler for drug formulation.

ADVANTAGE - The **aerosol generator** provides controlled doses of **medicament** to a patient during use. The pressure drop is detected before air is supplied to the mouthpiece with the result that the aerosol can be quickly delivered to the user as the user begins to inhale on the mouthpiece. The quick delivery of aerosol provides more efficient use of the user's lung capacity.

DESCRIPTION OF DRAWING(S) - The figure is a schematic view of an **aerosol generator** .

Mouthpiece (105)
Air passage (110)
Pressure transducer (138)
pp; 44 DwgNo 1/9
Derwent Class: B07; P34; S05
International Patent Class (Main): A61M-000/00; A61M-016/00
Technology Focus:
... Preferred Components: The **aerosol generator** further comprises a housing, a **capillary** passage, a **heater** , a reservoir, a metering **chamber** , a power source, a first, a second and a third valve. The **aerosol generator** further comprises a motor, a camshaft and a controller, the sensor being operable to send...

21/7,K/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
014520755 **Image available**
WPI Acc No: 2002-341458/200238
Device for continuously vaporizing small amounts of liquid in heated vaporizing chamber comprises capillary which introduces liquid slowly into vaporizing chamber, and device for exciting free end of capillary
Patent Assignee: SIEMENS AG (SIEI)
Inventor: GELLERT U
Number of Countries: 020 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 10049856	A1	20020307	DE 1049856	A	20001009	200238	B
WO 200230539	A2	20020418	WO 2001DE3862	A	20011009	200238	

Priority Applications (No Type Date): DE 1049856 A 20001009
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 10049856	A1		5	B01D-001/00	
WO 200230539	A2	G		B01D-001/00	

Designated States (National): US
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Abstract (Basic): DE 10049856 A1
NOVELTY - A device for continuously **vaporizing** small amounts of a **liquid** (3) in a **heated vaporizing chamber** (1) comprises a **capillary** (4) which introduces the **liquid** slowly into the **vaporizing chamber** ; and a device (12) for exciting the end of the free end of the **capillary** . The end (7) of the **capillary** has an outlet opening (6) and protrudes into the **vaporizing chamber** .
DETAILED DESCRIPTION - Preferred Features: The **capillary** for the **liquid** is formed as a glass or quartz **capillary** . The **capillary** is held in a wall duct (9) which is guided through a wall of the **vaporizing chamber** . The exciting device is a gas nozzle which neighbors the free end of the **capillary** and flows from the side with a gas stream (11).
USE - Used for analyzing **liquids** .
ADVANTAGE - **Vaporizing** can be continuously carried out without **vaporizing** the **vaporizing** residues.
DESCRIPTION OF DRAWING(S) - The drawing shows a cross-section through the **vaporizing** device.
Vaporizing chamber (1)
Liquid (3)
Capillary (4)
Outlet opening (6)
End of **capillary** (7)
Wall duct (9)
Gas stream (11)
Gas nozzle (12)
pp; 5 DwgNo 1/4
Derwent Class: H05; J04; S03
International Patent Class (Main): B01D-001/00
International Patent Class (Additional): G01N-001/28

21/7,K/14 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
011063944 **Image available**
WPI Acc No: 1997-041869/199704
Capillary heat **exchanger for** vaporising **liq. nitrogen - has vertical array of alternating** vaporisation chambers **, with** capillary **tubes, and pressure control** chambers **connected together in series**
Patent Assignee: ECOMETRICS CORP (ECOM-N)
Inventor: DAVIDSON J G
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5582015	A	19961210	US 94364663	A	19941227	199704	B

Priority Applications (No Type Date): US 94364663 A 19941227
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5582015	A		7	F17C-009/02	

Abstract (Basic): US 5582015 A
The **capillary heat** exchanger comprises a **vaporization chamber** having an inlet at one end of the **chamber** connected to the **liquid** nitrogen container through a pressure release valve, and an outlet at an opposite end of the **chamber** . The **chamber** comprises an elongated enlarged **chamber** having enclosed exterior walls that are capable of withstanding the **vaporization** pressures exerted by **liquid**

nitrogen in it and a number of **capillary** tubes being mounted on the exterior of the **chamber** and spaced along the **chamber** .

The **capillary** tubes have inlets and outlets in communication with the interior of the **chamber** and forming loops extending between the inlets and the outlets on the exterior of the **chamber** . The inlets of the **capillary** tubes are positioned adjacent a portion of the **chamber** that is covered by **liquid** nitrogen as it flows through the **chamber** , such that **liquid** nitrogen can flow into the **capillary** tubes through the inlets. The **capillary** tubes permit **vaporization** of the **liquid** nitrogen under controlled pressure and **heat** transfer conditions that are not present in the **chamber** . The exterior walls of the **capillary** tubes provide increased surface areas for cooling purposes. The nitrogen is vented to the atmosphere after the nitrogen has been **vaporized** and has absorbed **heat** from a refrigeration compartment on the outside of the **heat** exchanger.

Dwg.1/5

Derwent Class: Q69
International Patent Class (Main): F17C-009/02

21/7,K/35 (Item 35 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
000962116
WPI Acc No: 1973-39371U/197328
Heat-**link** - **with** capillary vapourizer **and low flow resistance liq passage**
Patent Assignee: MOORE RD (MOO -I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 3741289	A					197328 B

Priority Applications (No Type Date): US 71143410 A 19710514; US 7052642 A 19700706
Abstract (Basic): US 3741289 A

Heat link comprises a porous **capillary** **vapouriser** in thermal contact with a **heat** source. The vapour of a **heat** transfer liq. (e.g. water) is conveyed from the **vapouriser** along a **chamber** , the walls of which lose **heat** to a **heat** sink, and a liq. return conduit conveys liq. from the **heat** sink to the **vapouriser** . A second **fluid** e.g. halogenated methane, having a limited solubility in the **heat** transfer liq. is located so that its vapour is free to mingle with the vapour of the **heat** transfer liq. in the **chamber** adjacent the **vapouriser** .

Derwent Class: J08; Q78
International Patent Class (Additional): F28D-015/00

```
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200431
File 347:JAPIO Nov 1976-2003/Dec(Updated 040402)
File 371:French Patents 1961-2002/BOPI 200209
Set     Items   Description
S1       2712   (PRODUC???? OR GENERAT???)(1N)AEROSOL? ? OR AEROSOLIZ? OR -
            AEROSOLIS?
S2      89205   (FLOW OR FLUID OR LIQUID)()PASSAGE? OR CAPILLARY OR CAPILL-
            ARIES
S3    2585467   HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4    1070116   SLEEVE? OR SHEATH OR SHEATHS OR CHAMBER? ?
S5    3120566   DETACH???? OR REMOV???? OR ATTACH???? OR RELEAS???? OR APP-
            END? OR DISENGAG?????
S6      48362   MEDICAMENT? ? OR MEDICAT?
S7     535985   MEDICAL OR MEDICIN??
S8      90970   DRUG? ?
S9     134122   PHARMACEUTICAL? ?
S10    100625   ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR CHOLINERG-
            IC? ? OR INFLAMMATOR? OR BIOTIC? ? OR HISTAMINE? ? OR TUSSIVE?
             ?) OR ANTIALLERGIC? ? OR ANTIINFLAMMATOR??? OR ANTICHOLINERG-
            IC? ? OR ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSS...
S11     30178   DIURETIC? ? OR BRONCHODILATOR? ? OR HORMONE? ?
S12     15991   S4(1N)S5
S13         0   S1 AND S2 AND S3 AND S12
S14        18   S1 AND S2 AND S3 AND S4
S15     39467   IC=(A61M-011 OR A61M-015 OR A61M-016 OR B05B-001 OR B05B-0-
            17)
S16       678   IC=B05B-001/24
S17         8   S14 AND S15:S16
S18        33   S2 AND S3 AND S12
S19         1   (S18 AND S15:S16) NOT S17
S20         2   (S14 AND S6:S11) NOT (S17 OR S19)
S21         1   (S18 AND S6:S11) NOT (S17 OR S19 OR S20) [not relevant]
S22    118754   ATOMIS? OR ATOMIZ? OR VOLATILIZ? OR VOLATILIS? OR NEBULIS?
            OR NEBULIZ? OR VAPORIS? OR VAPORIZ? OR VAPOURIS? OR VAPOURIZ?
            OR HUMIDIFIER? ? OR INHALER? ? OR INHALAT?R? ?
S23         8   ((S14 OR S18) AND S22) NOT (S17 OR S19 OR S20 OR S21)
S24       482   S2 AND S3 AND S4:S5 AND S22
S25        26   S24 AND S6:S11
S26        29   S24 AND S15:S16
S27        11   S25 AND S26
S28         6   S27 NOT (S17 OR S19:S21 OR S23)
S29         8   S25:S26 AND S4 AND S5
S30         4   S29 NOT (S17 OR S19:S21 OR S23 OR S27)

17/26,TI/4      (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004  Thomson Derwent. All rts. reserv.
015583859
WPI Acc No: 2003-646016/200361
   Aerosol   generator  as hand-held inhaler for drug formulation,
  comprises sensor detecting pressure drop in interior of mouthpiece

17/34/6      (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004  Thomson Derwent. All rts. reserv.
008939294     **Image available**
```

WPI Acc No: 1992-066563/199209
Smoking article - has flavour aerosol generated **by** heat **transfer to flavour bed from combustion of** heat **source**
Patent Assignee: PHILIP MORRIS PROD INC (PHIM); PHILIP MORRIS PROD (PHIM); MORRIS P PRODUCTS I (PHIM); PHILIP MORRIS INC (PHIM)
Inventor: FLEISCHHAUER G S; HAYWARD C R; HEARN J R; HOUCK W G; HOUGHTON K S ; LANZILLOTTI H L; LILLY A C; LOSEE D B; SANDERS E B; SERRANO M A; CLIFTON LILLY A; LANZILLOTTI H V; LILLY C A; LOSEE B D; LANZILLOTT H V
Number of Countries: 023 Number of Patents: 016
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 472367	A	19920226	EP 91307550	A	19910815	199209	B
AU 9182603	A	19920227				199218	
NO 9103250	A	19920225				199218	
CA 2049807	A	19920225	CA 2049807	A	19910823	199220	
FI 9103990	A	19920225	FI 913990	A	19910823	199221	
BR 9103593	A	19920512	BR 913593	A	19910821	199226	
CN 1059841	A	19920401	CN 91105820	A	19910821	199246	
TW 199090	A	19930201	TW 91108538	A	19911030	199327	
AU 645828	B	19940127	AU 9182603	A	19910821	199410	
US 5345951	A	19940913	US 88223153	A	19880722	199436	
			US 89315822	A	19890127		
			US 90571730	A	19900824		
			US 92927734	A	19920812		
SU 1836039	A3	19930823	SU 5001425	A	19910823	199518	
EP 472367	B1	19960306	EP 91307550	A	19910815	199614	
DE 69117615	E	19960411	DE 617615	A	19910815	199620	
			EP 91307550	A	19910815		
ES 2084778	T3	19960516	EP 91307550	A	19910815	199627	
CA 2049807	C	20020723	CA 2049807	A	19910823	200257	
JP 3325591	B2	20020917	JP 91224708	A	19910809	200268	

Priority Applications (No Type Date): US 90571730 A 19900824; US 88223153 A 19880722; US 89315822 A 19890127; US 92927734 A 19920812
Cited Patents: EP 352106; EP 352109; EP 395280
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 472367	A				
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI NL SE					
CA 2049807	A			A24D-001/00	
FI 9103990	A			A24D	
BR 9103593	A			A24D-001/00	
CN 1059841	A			A24D-001/00	
TW 199090	A			A24F-013/00	
AU 645828	B			A24D-001/18	Previous Publ. patent AU 9182603
US 5345951	A		21	A24D-001/00	CIP of application US 88223153 CIP of application US 89315822 Cont of application US 90571730 CIP of patent US 4966171 CIP of patent US 4991606
SU 1836039	A3		17	A24D-001/18	
EP 472367	B1	E	24	A24F-047/00	
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI NL SE					
DE 69117615	E			A24F-047/00	Based on patent EP 472367
ES 2084778	T3			A24F-047/00	Based on patent EP 472367
CA 2049807	C	E		A24D-001/00	
JP 3325591	B2		13	A24F-047/00	Previous Publ. patent JP 4258281

Abstract (Basic): EP 472367 A

The smoking article has a mouth end and a distal end and comprises an active element (211) at the distal and in fluid communication with the mouth end. The active element comprises a non-combustible substantially cylindrical hollow **sleeve** (222) having a first end at the distal end and a second end closer to the mouth end. A **heat** source (220) in contained in the **sleeve** adjacent the first end of, having a **fluid passage** (226) therethrough.

A flavour bed (221) in the **sleeve** is adjacent the second end, in radiative abnd convective **heat** transfer relationship with said **heat** source. A spacer (101) maintains the flavour bed in spaced-apart relationship with the **heat** source. The **sleeve** is air-permeable adjacent the **heat** source for admitting air to support combustion of the **heat** source.

ADVANTAGE - Avoids the potential for inhalation of glass fibre by a smoker of such an article. (25pp Dwg.No. 2/21

Abstract (Equivalent): EP 472367 B

A smoking article having a mouth end and a distal end and comprising: an active element (211) at said distal end in fluid communication with said mouth end, said active element comprising: a substantially non-combustible substantially cylindrical hollow **sleeve** having a first end at said distal end and a second end closer to said mouth end, at least a portion of which at said first and end is metallic, and said **sleeve** including a substantially air-impermeable inner **sleeve** (23) adjacent said flavour bed (221), said hollow **sleeve** being air permeable adjacent said **heat** source for admitting air to support combustion of said **heat** source, and air-impermeable adjacent said flavour bed to prevent combustion of material in said flavour bed; a **heat** source (220) suspended in said hollow **sleeve** adjacent said first end thereof, said **heat** source having a **fluid passage** (226) therethrough and being spaced from the interior wall of said hollow **sleeve** , so defining an annular space (25) around said **heat** source; a flavor bed (221) in said hollow **sleeve** adjacent said second end thereof, in radiative and convective **heat** transfer relationship with said **heat** source; spacer means (101) for maintaining said flavor bed in spaced-apart relationship with said **heat** source; and an expansion **chamber** (212) for cooling said aerosol adjacent said flavour bed (221) toward said mouth end, said expansion **chamber** comprising a tube having an inner diameter equal to the outer diameter of said inner **sleeve** (23), and fitting over a portion (120) of said inner **sleeve** toward said mouth end; characterised in that said substantially non-combustible hollow **sleeve** comprises a drawn metallic **sleeve** (222) having the outer diameter of said tube, and that said drawn **sleeve** has longitudinal flutes (272) in the surface thereof and an inner diameter in the areas of said inner **sleeve** (23), said **heat** source, to aid in maintaining combustion thereof.

(Dwg.1/21

Abstract (Equivalent): US 5345951 A

A air-permeable **sleeve** is located adjacent a **heat** source for admitting air to support combustion of the **heat** source. It comprises an inner **sleeve** which is a laminate of a metallic foil and paper which is air-impermeable adjacent the flavour bed to prevent combustion of material in the flavour bed. The flavour bed is positioned to receive radiant energy from the **heat** source and to be in fluid flow relationship with the **heat** source.

The bed is **heated** substantially exclusively through the

radiative, convective and substantially nonconductive **heat** transfer relationship with the **heat** source, **heat** transfer by conduction through the **sleeve** to the flavour bed being substantially absent. When the **heat** source is ignited and air is drawn through the smoking article, air is **heated** as it passes through the **fluid passage** .

ADVANTAGE - The flavour bed is in radiative, convective and substantially nonconductive **heat** transfer relationship with the **heat** source.

(Dwg.8/21

Derwent Class: P15; P34
International Patent Class (Main): A24D-001/00; A24D-001/18; A24D-010/00; A24F-013/00; A24F-047/00
International Patent Class (Additional): A24B-015/18; A24D-001/04; A24D-003/10; **A61M-015/06**

17/34/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
008137483
WPI Acc No: 1990-024484/199004
Smoking article with heat **source** producing aerosol **flavour bed - where hot air from combustion source enters flavour bed**, releases aerosol **which is cooled and filtered**
Patent Assignee: PHILIP MORRIS PROD INC (PHIM); PHILIP MORRIS PRODS (PHIM)
Inventor: HAYWARD C R; HEARN J R; HOUGHTON K S; LANZILLOTTI H V; LILLY A C; LOSEE D B; SANDERS E B; SERRANO M A; HEARNE J R; LANZILLOTT H V; LILLY A
Number of Countries: 029 Number of Patents: 021
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 352109	A	19900124	EP 89307361	A	19890720	199004	B
PT 91243	A	19900208				199009	
AU 8938816	A	19900125				199010	
NO 8903003	A	19900219				199013	
BR 8903632	A	19900313				199015	
DK 8903625	A	19900123				199018	
FI 8903525	A	19900123				199018	
JP 2084165	A	19900326	JP 89188694	A	19890720	199018	
ZA 8905571	A	19900725	ZA 895571	A	19890721	199034	
HU 52355	T	19900730				199035	
US 4966171	A	19901030	US 89315822	A	19890127	199046	
CN 1039710	A	19900221				199047	
US 4991606	A	19910212	US 88223153	A	19880722	199109	
IL 91022	A	19921230	IL 91022	A	19890718	199309	
CA 1313103	C	19930126	CA 606399	A	19890721	199310	
SU 1836036	A3	19930823	SU 4614744	A	19890721	199518	
EP 352109	B1	19951227	EP 89307361	A	19890720	199605	
DE 68925243	E	19960208	DE 625243	A	19890720	199611	
			EP 89307361	A	19890720		
ES 2082778	T3	19960401	EP 89307361	A	19890720	199621	
PH 26722	A	19920915	PH 38977	A	19890721	199634	
KR 9614861	B1	19961021	KR 8910337	A	19890721	199929	

Priority Applications (No Type Date): US 89315822 A 19890127; US 88223153 A 19880722
Cited Patents: A3...9127; EP 212234; EP 264195; No-SR.Pub; US 3065756; US 3886954
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 352109	A	E	16		
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
US 4966171	A		16		
US 4991606	A		13		
SU 1836036	A3		10	A24D-001/18	
EP 352109	B1	E	21	A24F-047/00	
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
DE 68925243	E			A24F-047/00	Based on patent EP 352109
ES 2082778	T3			A24F-047/00	Based on patent EP 352109
IL 91022	A			A24D-001/18	
CA 1313103	C			A24D-001/00	
PH 26722	A			A24B-015/16	
KR 9614861	B1			A24B-015/28	

Abstract (Basic): EP 352109 A

Smoking article in which a flavoured **aerosol** is **generated** by a flavour bed by drawing **heated** air through it. The air is **heated** by a combustion pref. carbon, **heat** source. The transfer of **heat** from the **heat** source to the flavour bed is obtd. by convective and radiative **heat** transfer.

USE/ADVANTAGE - Smoking article which produces no visible sidestream smoke and achieves the sensations of smoking tobacco without burning tobacco. Article looks and feels like a cigarette. Inhalation of glass fibres is avoided.

(Dwg.0/13

Abstract (Equivalent): EP 352109 B

A smoking article having at its distal end remote from the mouth end an active element (11) in fluid communication with the mouth end, the active element comprising a substantially non-combustible substantially cylindrical hollow **sleeve** (22) containing adjacent the distal end a combustible **heat** source (20) having a **fluid passage** therethrough, and a flavour bed (21) adjacent the mouth-ward end of the active element, in convective and radiative **heat** transfer relationship with the **heat** source and capable of releasing a flavoured aerosol upon the passage of **heated** air therethrough to be carried thereby to the mouth end of the article, wherein the hollow **sleeve** is air-permeable adjacent the **heat** source for admitting air to support combustion of the **heat** source, and is air-impermeable adjacent the flavour bed to prevent combustion of material in the flavour bed, wherein the **heat** source (20) is suspended in the **sleeve** (22) and spaced from the interior wall of the **sleeve** to define an annular space round the **heat** source.

(Dwg.1/13

Abstract (Equivalent): US 4991606 A

Substitute cigarette, has active element and **heat** source in tip region, and within a **sleeve** which is non-combustible and has a flavour bed nearest the mouth end in **heat** transfer relation w.r.t. the **heat** source, pref. comprising C. The **sleeve** or its wrapper provide a porous wall for air entry adjacent the **heat** source, the air being **heated** to release aerosol form the flavour bed, which opt. is tobacco pref. preceding a cellulose acetate filter plug.

Pref. the **sleeve** comprises Al-lined paper, pref. spirally wound and perforated. Opt. the tip has a perforated end cap.

ADVANTAGE - No visible sidestream smoke. (13pp

Derwent Class: D18; P15

International Patent Class (Main): A24B-015/16; A24B-015/28; A24D-001/00;

A24D-001/18; A24F-047/00
International Patent Class (Additional): A24B-015/00; A24B-015/18; A24C-001/00; A24D-001/02; **A61M-015/06**

17/34/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008137480
WPI Acc No: 1990-024481/199004
Smoking article with heat **source** - producing aerosol **from flavour bed, in porous ceramic cylindrical housing**
Patent Assignee: PHILIP MORRIS PRODS (PHIM); PHILIP MORRIS PROD INC (PHIM); PHILIP MORRIS INC (PHIM)
Inventor: HAYWARD C R; HEARN J R; LANZILLOTT H V; LOSEE B D; MERRILL D E; SAUNDERS E B; LANZILLOTTI H V; LOSEE D B; SANDERS E B
Number of Countries: 024 Number of Patents: 012
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 352106	A	19900124	EP 89307356	A	19890720	199004 B
PT 91240	A	19900208				199009
AU 8938817	A	19900125				199010
NO 8903001	A	19900219				199013
BR 8903630	A	19900313				199015
DK 8903622	A	19900123				199017
FI 8903522	A	19900123				199018
JP 2084166	A	19900326	JP 89190414	A	19890721	199018
ZA 8905568	A	19900725	ZA 895568	A	19890721	199034
CN 1040496	A	19900321				199051
US 5159940	A	19921103	US 88222961	A	19880722	199247
IL 91019	A	19921115	IL 91019	A	19890718	199250

Priority Applications (No Type Date): US 88222961 A 19880722
Cited Patents: A3...9130; EP 212234; EP 264195; No-SR.Pub; US 3258015; WO 8401274
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 352106	A	E	18		
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
US 5159940	A		17	A24D-001/60	
IL 91019	A			A24D-001/18	

Abstract (Basic): EP 352106 A
Smoking article in which a flavoured **aerosol** is **generated** by **heat** transfer to a flavour bed from the combustion of a carbon **heat** source. Pref. the **heat** source and flavour bed are contained within a non-combustible cylindrical hollow ceramic **sleeve** .
USE/ADVANTAGE - Smoking article which produces no visible side stream smoke and achieves the sensations of smoking tobacco without burning tobacco. Article looks and feels like a cigarette. Inhalation of glass fibres is avoided
Abstract (Equivalent): US 5159940 A
A smoking article has a distal end active element comprising a non-combustible cylindrical ceramic **sleeve** holding a cylindrical C-contg. **heat** source at the distal end with a central **fluid passage** and a flavour bed at the proximal end in direct radiative and convective **heat** transfer relation with the source so that the ignited source **heats** air which is drawn through the bed to release a flavoured aerosol.

The **sleeve** is pref. of porous cordierite, mullite, alumina or zirconia with a density of 1.1-2.0 g/cm3, a porosity of 40-60% and a particle size of 0.5-100 microns, most pref. 1.3 g/cm3, 50% and 35 microns. The source is pref. suspended from the **sleeve** interior to define an annular space. The bed pref. comprises tobacco-contg. pellets and there is a cellulose acetate filter plug adjacent the article mouth end.

ADVANTAGE - Has the look and feel of a conventional cigarette, and provides efficient **heating** and release of a flavour aerosol.

Derwent Class: D18; P15; P34
International Patent Class (Main): A24D-001/18; A24D-001/60
International Patent Class (Additional): A24B-015/18; A24D-001/02; A24D-001/12; A24F-047/00; **A61M-015/06**

19/34/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
008254860 **Image available**
WPI Acc No: 1990-141861/199019

Nebuliser for inhalation therapy - produces moisturised gas stream with liq. droplets broken up or collected from stream

Patent Assignee: AUTOMATIC LIQUID PACKAGING (AUTO-N)
Inventor: KOMENDOWSKI H; WEILER G H; KOMENDOWSK H
Number of Countries: 004 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2224447	A	19900509	GB 8924439	A	19891031	199019	B
DE 3936687	A	19900510	DE 3936687	A	19891103	199020	
AU 8944408	A	19900510				199025	
US 4951659	A	19900828	US 88267071	A	19881104	199037	
GB 2224447	B	19920916	GB 8924439	A	19891031	199238	
DE 3936687	C2	20011011	DE 3936687	A	19891103	200159	

Priority Applications (No Type Date): US 88267071 A 19881104
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2224447	B			A61M-011/02	
DE 3936687	C2			A61M-011/02	

Abstract (Basic): GB 2224447 A

Nebuliser has a hollow elongate housing forming a mixing chamber (22) which serially communicates with a droplet **disengaging chamber** (26) arranged at a small angle to the mixing chamber. A manifold body (29) passes transversely through the mixing chamber and includes a pressurised gas channel extending from an inlet (60) to an outlet in a nebulising chamber (88) and a liq. aspirating channel extending from a liq. bottle (56) to an annular discharge outlet surrounding the gas outlet in the nebulising chamber (88), such that an aerosol is formed downstream of the gas outlet. A spray deflector (132) is located in the path of the aerosol in the mixing chamber (22) to intercept and break up liq. droplets into an aerosol.

Pref. there is a condensate well (72) at the lowest portion of the droplet **disengaging chamber** (26) form which liq. is returned to the supply bottle (56). The degree of oxygen enrichment of the gas supply can be varied by adjustment of the air inlet (149). An electrical resistance **heater** (157) can be arranged in **heat** exchange relation with the liq. flowing to the nebuliser (88).

USE/ADVANTAGE - As a nebuliser for inhalation therapy. Provides a

compact versatile nebuliser with a relatively highly moisturised gas output. (40pp Dwg.No.2/17

Abstract (Equivalent): GB 2224447 B

A nebuliser device for use in inhalation therapy comprising in combination: (a) a hollow, elongated housing defining a mixing chamber communicating and serially interconnected with a droplet **disengaging chamber** disposed relative to said mixing chamber at an angle less than a straight angle; said mixing chamber having an ambient air inlet aperture and said droplet **disengaging chamber** having an outlet port; (b) an elongated manifold body mounted in said housing and extending transversely through said mixing chamber; said manifold body defining therewithin: (1) a nebulising chamber situated in a mid-region thereof, (2) a gas channel extending from one end of said manifold body to said nebulising chamber and communicating therewith, (3) a liquid channel extending from the opposite end region of said manifold body to said nebulising chamber and communicating therewith; and (4) aspirating means positioned in said nebulising chamber and defining in combination with said nebulising chamber: (i) a gas passageway for conducting a pressurised gas stream from said gas channel to a gas orifice which opens into said mixing chamber in a direction generally towards said **disengaging chamber** ; (ii) a **liquid passageway** for conducting a liquid stream from said liquid channel to an annular opening located in said nebulising chamber adjacent to said gas orifice and extending circumferentially thereabout; and (iii) an aerosol discharge orifice in substantial registry with said gas orifice and downstream therefrom; the interrelationship between said gas orifice and said annular opening being such that a pressurised gas stream issuing from said gas orifice entrains droplets of said liquid stream from said annular opening and disperses entrained droplets in said so issuing pressurised gas stream; (c) a spray deflector means located in said mixing chamber and in the path of said so issuing gas stream from said gas orifice and through said aerosol discharge orifice, the relationship between the size of said spray deflector and the distance thereof from said aerosol discharge orifice being such that a major portion of liquid droplets emerging from said aerosol discharge orifice in such gas stream strike said spray deflector means, thereby breaking up said spray droplets into an aerosol which disperses into the adjacent gas stream; (d) gas connector means for connection of said gas channel to a source of pressurised gas; and (e) liquid connector means for connection of said liquid channel to a source of liquid to be nebulised.

(Dwg.0/0

Abstract (Equivalent): US 4951659 A

Nebulizer for inhalation therapy comprises a hollow, elongated housing defining a mixing chamber interconnected with a droplet **disengaging chamber** , a manifold body extending transversely through the housing, and a spray deflector in the mixing chamber in the path of a gas stream issuing from an aerosal discharge orifice in the manifold body. ADVANTAGE - Reliable compact and efficient.

(15pp

Derwent Class: B07; P34

International Patent Class (Main): **A61M-011/02**

International Patent Class (Additional): **A61M-015/00** ; **A61M-016/10**

20/26,TI/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014746005
WPI Acc No: 2002-566712/200260
Use of humidified air in the preparation of a medicament **for the treatment of asthma or related lung conditions, e.g. bronchitis, cigarette lung, emphysema, cystic fibrosis, bronchiolitis or bronchiectasis**

20/34/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016124918
WPI Acc No: 2004-282794/200426
Propellant free liquid aerosol formulation, useful for the treatment of asthma, comprises a high volatility carrier and a second component e.g. analgesic medicament
Patent Assignee: CHRYSALIS TECHNOLOGIES INC (CHRY-N)
Inventor: COX K A; IRVING C L; **MCRAE** D D; NGUYEN T T; **NICHOLS** W A
Number of Countries: 105 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200422128	A2	20040318	WO 2003US27473	A	20030904	200426 B
US 20040081624	A1	20040429	US 2002408280	P	20020906	200429
			US 2003444677	P	20030204	
			US 2003653934	A	20030904	

Priority Applications (No Type Date): US 2003444677 P 20030204; US 2002408280 P 20020906; US 2003653934 A 20030904
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200422128	A2	E	58	A61M-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20040081624	A1	A61L-009/04	Provisional application US 2002408280 Provisional application US 2003444677

Abstract (Basic): WO 200422128 A2
NOVELTY - Propellant free liquid aerosol formulation (I), comprising a high volatility carrier (A) and a second component (B), adapted to form a vaporization aerosol.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) An **aerosol generating** device (II), comprising a liquid source of (I), a **flow passage** in fluid communication with the liquid source and a **heater** disposed to **heat** (I) to produce a vapor which admixes with air to **produce** an **aerosol** ; and
(2) A method of **generating** an **aerosol** , comprising supplying (I) from a liquid source to a **flow passage** , **heating** liquid aerosol formulation in a **heated** portion of the **flow passage** to produce a vapor and admixing the vapor with air to **produce** an **aerosol** .
ACTIVITY - Antiasthmatic.
No test details for antiasthmatic activity are given.
MECHANISM OF ACTION - None given.
USE - Formulation (I), comprising budesonide or albuterol, is useful for the treatment of asthma.

ADVANTAGE - The aerosols provided by (II) delivers **drugs** deep into the lung by minimizing the mouth and throat deposition and maximizing deposition of **drug** into the deep lung. (II) can provide immediate and consistent delivery of a controlled amount of **drug** formulation of aerosol to a patient.

pp; 58 DwgNo 0/15

Technology Focus:

TECHNOLOGY FOCUS - **PHARMACEUTICALS** - Preferred Components: Carrier (A) in (I) is a high volatility carrier and comprises about 20-80 volume % water and about 80-20 volume % ethanol or about 80-100 volume % water and up to about 20 volume % ethanol. (I) comprises, suspension, dispersion, gel or emulsion of (B) (at least about 1 wt% budenoside) in (A).

Component (B) is a **medicament** such as an **analgesic** , **anginal** preparation, anti-allergy, **antibiotic** , anti-convulsant, antidepressant, antiemetic, **antihistamine** , antiparkisonian **drug** , antipsychotic, antitussive, anxiolytic, **bronchodilator** , **diuretic** , **anticholinergic** , **hormone** , antiflammatory agent, a **drug** for erectile dysfunction, a **drug** for migraine headaches, a **drug** for the treatment of alcoholism, a **drug** for the treatment of addiction, muscle relaxant, nonsteroidal **anti - inflammatory** or an opioid.

The aerosol particles are substantially dry solid particles and have a mass median aerodynamic diameter of less than 2.5 microns (preferably 0.01-0.1 micron). The aerosol present in (II) is a condensation aerosol.

Preferred Device: Device (II) is a hand held inhaler and it further comprises a power supply, a controller, at least one valve disposed between the liquid source and the **flow passage** , a mouthpiece through which the aerosol is inhaled by a user, a pressure sensor, an air passage to supply the air into the mouthpiece and a valve which opens and closes the air passage and a discharge member operable to deliver an amount of (I) equal to the predetermined volume into the **heated** portion of the **flow passage** (**capillary** sized **flow passage**). The controller is operable to deliver power from the power supply to the **heater** so as to maintain the **heater** at a temperature range effective to vaporize the liquid aerosol formulation in the **flow passage** , to actuate the valve to control the flow of (I) from the liquid source to the **flow passage** and to actuate the valve within a predetermined time period after the pressure sensor detects a pressure drop in the mouthpiece as the user inhales. The **flow passage** comprises a metering **chamber** having a predetermined volume. The liquid source, **flow passage** and **heater** comprises a fluid delivery assembly which is removably attached to the (II).

Preferred Method: Formulation (I) is formulated to form a vapor when **heated** and to **produce** an **aerosol** comprised of aerosol particles that consist essentially of (B) when the vapor is admixed with ambient air. The generation of an aerosol continuously is performed by using (II) comprising a mouth piece and using a first fluid delivery assembly (supplies a first (I)) attached to (II).

The method further comprises removing the first fluid delivery assembly from (II), attaching a second fluid delivery assembly (supplies a second (I) different from the first (I)) to (II), repeating the **production** of **aerosol** using the second delivery assembly, detecting a pressure drop in the mouthpiece of (II) caused by a user inhaling on the mouthpiece, supplying a formulation (I) into the **heated** portion of the **flow passage** after detecting the pressure

drop, delivering the aerosol to the user through the mouthpiece, producing a first aerosol and a second aerosol containing aerosol particles both having different mass median aerodynamic diameter.

Extension Abstract:

SPECIFIC COMPOUNDS - The use of ethanol is specifically claimed as (A).

The use of albuterol or budesonide is specifically claimed as (B).

ADMINISTRATION - Administration of (I) is by inhalation. No dosage is given.

Derwent Class: B01; B05; B07; P34
International Patent Class (Main): A61L-009/04; A61M-000/00

23/26,TI/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
004014566
WPI Acc No: 1984-160108/198426
Filling container with pressurised gas - by introducing vaporisable **solid then sealing and** heating

28/26,TI/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
013607548
WPI Acc No: 2001-091756/200110
Respiratory treatment apparatus for use during tracheal lavages, comprises a housing and a suction assembly, where the housing has a patient and a machine side port, liquid trap chambers **, a treatment** chamber **, and a wall having openings**

28/26,TI/5 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.
04301471
HUMIDIFIER FOR BREATHING GAS

28/26,TI/6 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2004 JPO & JAPIO. All rts. reserv.
03973371
INHALER

28/34/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.
014234867 **Image available**
WPI Acc No: 2002-055565/200207
Delivery medicament **apparatus for patient respiratory system and for use with** nebulizer **, comprises a** medication **cup, aerosol generator, housing, liquid supplier, and a connector**
Patent Assignee: AEROGEN IRELAND LTD (AERO-N); AEROGEN INC (AERO-N)
Inventor: POWER J S; FINK J B; KLIMOWICZ M; POWER J; SMITH N
Number of Countries: 096 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200185244	A1	20011115	WO 2001IE60	A	20010504	200207	B

```
AU 200155033    A    20011120  AU 200155033     A    20010504  200219
EP 1278569      A1   20030129  EP 2001928171    A    20010504  200310
                               WO 2001IE60      A    20010504
US 20030140921  A1   20030731  US 2001812755    A    20010320  200354
                               US 2001812987    A    20010320
                               US 2001849194    A    20010504
                               US 2001876402    A    20010607
                               US 2001876542    A    20010607
                               US 2001344484    P    20011101
                               US 2002349763    P    20020115
                               US 2002349805    P    20020115
                               US 2002380655    P    20020514
                               US 2002381830    P    20020520
                               US 2002408743    P    20020905
                               US 2002284068    A    20021030
                               US 2003345875    A    20030115
US 6615824      B2   20030909  US 2001849194    A    20010504  200361
JP 2003532502   W    20031105  JP 2001581897    A    20010504  200377
                               WO 2001IE60      A    20010504
MX 2002010884   A1   20030301  WO 2001IE60      A    20010504  200413
                               MX 200210884     A    20021105
US 20040035490  A1   20040226  US 2001849194    A    20010504  200416
                               US 2003465023    A    20030618
Priority Applications (No Type Date): WO 2000IE51 A 20000505
Patent Details:
Patent No  Kind Lan Pg   Main IPC     Filing Notes
WO 200185244  A1 E  74 A61M-015/00
   Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
   CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS
   JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL
   PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
   Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
   IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
AU 200155033  A         A61M-015/00   Based on patent WO 200185244
EP 1278569    A1 E      A61M-015/00   Based on patent WO 200185244
   Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
   LI LT LU LV MC MK NL PT RO SE SI TR
US 20030140921 A1        A61M-011/00    CIP of application US 2001812755
                                        CIP of application US 2001812987
                                        CIP of application US 2001849194
                                        CIP of application US 2001876402
                                        CIP of application US 2001876542
                                        Provisional application US 2001344484
                                        Provisional application US 2002349763
                                        Provisional application US 2002349805
                                        Provisional application US 2002380655
                                        Provisional application US 2002381830
                                        Provisional application US 2002408743
                                        CIP of application US 2002284068
US 6615824    B2         A61M-011/00
JP 2003532502 W      67 A61M-016/00   Based on patent WO 200185244
MX 2002010884 A1         A61M-015/00   Based on patent WO 200185244
US 20040035490 A1         B65B-001/04   Cont of application US 2001849194
                                        Cont of patent US 6615824
Abstract (Basic): WO 200185244 A1
        NOVELTY - A delivery medicament apparatus comprising a
```

medication cup (2) to receive a liquid **medicament** to be delivered to a respiratory system, an **aerosol generator**, a housing (4) for the generator, a liquid supplier for delivering the **medicament** from the cup to the generator, and a connector (6) to receive aerosol generated, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a **nebulizer** for use with a ventilator circuit comprising tubing section(s) for delivering air to a patient from a ventilator, and a **nebulizer** to deliver a **nebulized** fluid to the tubing section for inhalation by a patient on the ventilator;

(2) providing a **nebulized** fluid to a patient; and

(3) a ventilator circuit comprising the **nebulizer** , a fluid delivery system, the ventilator, and a control system for the **nebulizer** and the ventilator, where the **nebulizer** has a vibrator for moving fluid from the back side of the vibrator through the openings to produce the **nebulized** fluid which enters the tubing section.

USE - For delivery of **medicament** to a patient respiratory system and for use with a **nebulizer** .

ADVANTAGE - The inventive apparatus provides a **medication** cup which is **releasable** from the aerosol generator housing. This a highly efficient arrangement. When the liquid **medicament** has been delivered to a patient respiratory system, the empty **medication** cup can be refilled with **medicament** , or can be replaced with a new cap full of **medication** in a quick and simple step. The apparatus can be reused many times. The power usage of the apparatus is relatively low (preferably approximately1.5W), thus the associated **heat** generated during use is negligible. The apparatus may be placed as close to the patient as desired, even touching the patient for long periods of use without causing discomfort to the patient, or without burning discomfort to the patient, or without burning the patient.

DESCRIPTION OF DRAWING(S) - The figure is a perspective view of the inventive delivery apparatus.

Medication cup (2)
Housing (4)
Connector (6)
pp; 74 DwgNo 1/25

Technology Focus:

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Component: The aerosol generator housing comprises four fingers, and further comprises a skirt to sealingly engage the **medication** cup. The liquid supplier defines an annular protruding neck. The skirt has an angled surface to sealingly engage a chamfered mouth of the cup. The cup is **releasably** mounted to the aerosol generator housing by a screw-thread engagement. It defines a reservoir for the liquid **medicament** , and may also comprise a delivery tube extending from the reservoir, the liquid supplier being at least partially received within the delivery tube for delivery of the liquid **medicament** to the aerosol generator. The delivery tube has an inlet to receive the liquid **medicament** from the reservoir. The inlet has slots which are circumferentially spaced-apart around the delivery tube. A base of the reservoir is at least partially slopes downwards towards the delivery tube. At least part of the liquid supplier extends below the inlet. The reservoir includes a refill port and a central well. The liquid supplier comprises a spring to reciprocate the liquid supplier in the delivery tube. The cup comprises depth indicator(s) having an internal

marking on a wall of the cup. The cup has a base for an upright orientation when receiving the liquid **medicament** . The tubing section (preferably T-shaped section) form an air path, and may also comprise a source of fluid that is separated from the air path by the vibrator. The **nebulizer** may also include a **capillary** feed system provides fluid to the backside of the vibrator, and a ring-shaped piezoelectric vibrator. Preferred Property: The control system can activate the **nebulizer** within 20 milliseconds of initiation of an inhalation cycle and deactivate the **nebulizer** within 20 milliseconds of termination of the inhalation cycle. The openings in the vibrator are sized to eject liquid droplets such that at least70 wt.% have a size of 1-5 mum.

Derwent Class: B07; P34; Q31
International Patent Class (Main): **A61M-011/00** ; **A61M-015/00** ; **A61M-016/00** ; B65B-001/04
International Patent Class (Additional): **A61M-016/08**

30/26,TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014284881
WPI Acc No: 2002-105582/200214
Cryotherapy system for e.g. treating mammalian injuries.has heat **exchanger for** volatilizing **refrigerant, sensor for sensing physiological property of mammal, and control that alters refrigerant flow rate based on sensor output**

File 348:EUROPEAN PATENTS 1978-2004/May W01
File 349:PCT FULLTEXT 1979-2002/UB=20040513,UT=20040506

Set	Items	Description
S1	6632	(PRODUC???? OR GENERAT???)(1N)AEROSOL? ? OR AEROSOLIZ? OR AEROSOLIS?
S2	72897	(FLOW OR FLUID OR LIQUID)()PASSAGE? OR CAPILLARY OR CAPILLARIES
S3	549699	HEAT OR HEATS OR HEATED OR HEATING OR HEATER? ?
S4	320417	SLEEVE? OR SHEATH OR SHEATHS OR CHAMBER? ?
S5	1134067	DETACH???? OR REMOV???? OR ATTACH???? OR RELEAS???? OR APPEND? OR DISENGAG?????
S6	89048	MEDICAMENT? ? OR MEDICAT?
S7	181309	MEDICAL OR MEDICIN??
S8	134515	DRUG? ?
S9	156755	PHARMACEUTICAL? ?
S10	79733	ANALGESIC? ? OR ANGINAL OR ANTI()(ALLERGIC? ? OR CHOLINERGIC? ? OR INFLAMMATOR? OR BIOTIC? ? OR HISTAMINE? ? OR TUSSIVE? ?) OR ANTIALLERGIC? ? OR ANTIINFLAMMATOR??? OR ANTICHOLINERGIC? ? OR ANTIBIOTIC? ? OR ANTIHISTAMINE? ? OR ANTITUSS...
S11	59138	DIURETIC? ? OR BRONCHODILATOR? ? OR HORMONE? ?
S12	14521	S4(1N)S5
S13	34	S1 AND S2 AND S3 AND S12
S14	1022	S1 AND S2 AND S3 AND S4
S15	**1**	**S1(S)S2(S)S3(S)S12 [not relevant]**
S16	7885	IC=(A61M-011 OR A61M-015 OR A61M-016 OR B05B-001 OR B05B-017)
S17	4	S13 AND S16
S18	**4**	**S17 NOT S15**
S19	330	S1/TI
S20	15	S2(S)S3(S)S4:S5 AND S19
S21	**13**	**S20 AND S16**
S22	**2**	**S20 NOT S21 [duplicates]**
S23	4430	S2(S)S3(S)S4:S5
S24	157	S6:S11 (S)S23
S25	187934	AEROSOL? OR VAPOR? OR VAPOUR?
S26	42191	NEBULI? OR VOLATILIZ? OR VALITILIS? OR ATOMIS? OR ATOMIZ?
S27	33	S24(S)S25:S26
S28	**3**	**(S16 AND S27) NOT (S15 OR S17 OR S21 OR S22)**
S29	14	S27 AND (S25/TI OR S26/TI)
S30	**2**	**S29 NOT (S15 OR S17 OR S21 OR S22 OR S28)**

18/6/2 (Item 2 from file: 348)
00294046
Intermittent signal actuated nebulizer.

21/3,AB,K/6 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
01020125
DISPOSABLE AEROSOL GENERATOR **SYSTEM AND METHODS FOR ADMINISTERING THE AEROSOL**
SYSTEME DE GENERATEUR **D'** AEROSOL **JETABLE ET PROCEDES D'ADMINISTRATION DE L'AEROSOL**
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality)

Inventor(s):
NICHOLS Walter A, 9608 Summercliff Court, Chesterfield, VA 23832, US,
SPRINKEL F Murphy Jr, 11017 Cedar Lane, Glen Allen, VA 23059, US,
Legal Representative:
SKIFF Peter K (agent), Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200349792 A1 20030619 (WO 0349792)
Application: WO 2002US38910 20021206 (PCT/WO US0238910)
Priority Application: US 20015155 20011207
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 6210
English Abstract
An aerosol generator (120)used with an inhaler (200), the inhaler (200) comprising a heater (130) for volatilizing liquid stored in the aerosol generator (120) and a method of using the inhaler. A body of the aerosol generator (120) including a sealed chamber (10) and an outlet (20), the chamber (10) being located between first (18) and second (18) layers of material. The chamber (10) holds a predeterminated volume of liquid which is expelled from the outlet (20) when the liquid in the chamber (10) is volatilized by the heater (130). The body includes a series of spaced apart aerosol generators (120), each of which can be advanced to a release position at which the heater can heat the liquid in the chambers (10). Prior to heating the fluid, the outlet (20) can be formed by severing the first (18) and second (14) layers with a priecing element (150) and the volatilized liquid can be expelled from the outlet (20) into a passage of a dispersing member (140).
Main International Patent Class: **A61M-015/00**
International Patent Class: **A61M-016/10**
Fulltext Availability:
Detailed Description
Claims
Detailed Description
... resistant to heating.
For example, in the embodiment shown in Figs 1 and 2, the **chamber** 10 is formed as a recess 12 in an injection molded body 14 of polymer material and a **flow passage** 30 comprises a channel 16 in the body 14, the channel 16 extending from the recess 12. The **chamber** 10 is sealed by a layer 18 such as aluminum foil **heat** sealed to the plastic body 14. In order to provide multiple doses of medicated fluid...fluid contained therein. Outlet 20 is preferably a small aperture at the end of the **flow passage** 30, the outlet being initially closed to the atmosphere. The **flow passage** 30 can have any suitable size which is effective to expel the vaporized fluid into the atmosphere and form the aerosol of desired droplet size. For instance, **flow passage** 30 can have an inside diameter of about 0. ...2 mm and a length of about 50 to 200 times the inside diameter. The **chamber** 10 can have any desired size such as a

size suitable to deliver a single...of heating members arranged to heat the fluid in the chamber and/or along the **flow passage** . Also, the fluid in the **chamber** could be expelled mechanically, e.g., by a member which pushes the fluid into the **flow passage** and a **heater** along the **flow passage** can be used to volatilize the fluid and expel the vaporized fluid out of the...FIG. 5 includes a heating element 132a configured to completely cover the chamber 10 and **flow passage** 30. With the **heater** element pattern shown in FIG. 5, greater **heating** can be achieved in the **flow passage** 30 due to the smaller cross sectional area of the **heating** element along the **flow passage** . The **heater** 132b shown in FIG. 6 includes a **heating** element 132b configured as a sinusoidally shaped strip which overlies **chamber** 10 and a rectilinear strip which overlies the **flow passage** 20.
In operation, the disposable cartridge 1 10 can be loaded into the inhaler 100...

Claim

... chamber.
20 The inhaler device according to Claim 16, wherein the disposable body includes a **flow passage** extending rectilinearly from the **chamber** , the **heater** including a first portion arranged to **heat** the **chamber** and a second portion arranged to **heat** the **flow passage** , the first and second portions of the **heater** comprising a layer of resistance **heating** material configured such that the second portion of the **heater** becomes hotter than the first portion of the **heater** during actuation of the **heater** to volatilize the fluid in the **chamber** .
21 A method of forming an aerosol using the inhaler device according to Claim 1...the outlet.
24 The method according to Claim 23, wherein the disposable body includes a **flow passage** extending rectilinearly from the **chamber** , the **heater** including a first portion arranged to **heat** the **chamber** and a second portion arranged to **heat** the **flow passage** , the first and second portions of the **heater** comprising a layer of resistance **heating** material configured such that the second portion of the **heater** becomes hotter than the first portion of the **heater** during volatilization of the fluid in the **chamber** .
25 The aerosol generator according to Claim 1, wherein the sealed chamber comprises a reservoir...body such that fluid in the chamber is forced out of the chamber, along a **flow passage** in the disposable body and toward the outlet, the **heater** being arranged to **heat** the liquid in the **flow passage** .
32 The inhaler device according to Claim 31, wherein the fluid ...upper surface of the disposable body, the outlet being connected to the chamber by a **flow passage** in the upper surface of the disposable body, the method including a step of mechanically forcing fluid out of the **chamber** so as to flow along the **flow passage** and activating the **heater** so as to volatilize the fluid in the **flow passage** and expel the volatilized fluid through the outlet.
38 The method according to Claim 37...

21/3,AB,K/10 (Item 10 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
00917732
AEROSOL GENERATOR **HAVING INDUCTIVE HEATER AND METHOD OF USE THEREOF**
GENERATEUR **D'** AEROSOL **POSSEDANT UN CHAUFFAGE PAR INDUCTION ET PROCEDE D'UTILISATION DE CE GENERATEUR**

Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality)
Inventor(s):
SHARPE David E, 6500 Glebe Point Road, Chesterfield, VA 23832, US,
FELTER John L, 14803 Loren Court, Chester, VA 23836, US,
Legal Representative:
SKIFF Peter K (agent), Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200251467 A2-A3 20020704 (WO 0251467)
Application: WO 2001US44812 20011130 (PCT/WO US0144812)
Priority Application: US 2000742323 20001222
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 4390
English Abstract

An **aerosol generator** includes an induction **heating** arrangement (100) to vaporize fluid contained in a **fluid passage** (120). The vapor is then expelled from the **fluid passage** (120) into the air creating a mist that forms the aerosol. The aerosol generator includes an excitation coil (110) that inductively **heats** a **heating** element (122) which transfers **heat** to the fluid in the **fluid passage** (120) . The **fluid passage** (120) can be located in a metal tube (122) which can be **removably** mounted in the aerosol generator.

Main International Patent Class: **B05B-001/24**
Fulltext Availability:
Detailed Description
Claims
Detailed Description
... reference to the following figures, wherein.
FIG. 1 is an exemplary embodiment of an inductive **heater** ;
FIG. 2 is another exemplary embodiment of an inductive **heater** ;
FIG. 3 is an exemplary embodiment of a control circuit for use with an inductive **heater** ;
FIG. 4 is an exemplary embodiment of an inductive **heater** with a concentrator **sleeve** ;
FIG. 5 is a top view of an exemplary concentrator **sleeve** surrounding a **capillary** tube;
FIG. 6 is a schematic of an exemplary embodiment of an aerosol generator; and...
...to the fluid passage 120. The fluid source can be integrally formed with the inductive **heater** or be an external component that is **removable** and replaceable. The fluid source 150 can provide fluid to the **fluid passage** 120 by numerous means, including, but not limited to, using pressure differences to force fluid...the inductive heater is it's adaptability. That is, because heating of fluids in the **fluid passage** may lead to buildup 6f particles on the inner walls of the passage 120

creating...
...containing different medicaments. Thus, the tube 122 can be designed so that it can be **removed** from the aerosol generator and replaced with another tube of the same or different dimensions...can be etched into a layer of ceramic material 1 5 such as alumina, the **heating** element can be formed by depositing a metal layer in the channel or on another layer of material, and the layers can be **attached** together by any suitable technique such as adhesive bonding, brazing, etc. The resulting composite thus provides a **fluid passage** by way of the channel and a **heating** element by way of the metal layer. The **heating** element can be located in an inductive.excitation coil arrangement and when fluid is supplied to the channel, the excitation coil arrangement can inductively **heat** the **heating** element to vaporize the fluid.
FIG. 6 shows a vapor driven aerosol generator 600 which...
...As shown, the aerosol generator 700 includes a fluid supply 742, a chamber 744, a **fluid passage** 746, a preheater element 748 and a main **heater** element 750. The preheater element 748 can be arranged on one side of the **chamber** 744 such that fluid in the **chamber** 744 is **heated** to form a vapor bubble which expands and drives the remaining fluid in the **chamber** 744 into the passage 746. If desired, an additional preheater element 752 can be provided in the **chamber** 744 in order to provide additional **heating** of the fluid. The main **heater** element 752 can be inductively **heated** by an excitation coil (not shown) to form a volatilized fluid which exits the passage...
Claim
An aerosol generator, comprising:
a **fluid passage** having an upstream end adapted to receive fluid from a fluid supply; an inductive **heater** comprising at least one excitation coil and at least one **heating** element located along the **fluid passage** , the excitation coil being adapted to form an electromagnetic field which causes the **heating** element to **heat** fluid in the **fluid passage** such that the fluid is vaporized and forms an aerosol after exiting the **fluid passage** . I 0 2. The aerosol generator of claim 1, wherein the excitation coil comprises a...
...or the coil is toroidal shaped. 3 . The aerosol generator of claim 1, wherein the **fluid passage** extends through a tube which is **removably** mounted in the aerosol generator...

21/3,AB,K/11 (Item 11 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
00917731
DISPOSABLE AEROSOL GENERATOR **SYSTEM AND METHODS FOR ADMINISTERING THE AEROSOL**
SYSTEME GENERATEUR **D'** AEROSOL **JETABLE ET PROCEDES D'ADMINISTRATION DE CET AEROSOL**
Patent Applicant/Assignee:
CHRYSALIS TECHNOLOGIES INCORPORATED, 7801 Whitepine Road, Richmond, VA 23237, US, US (Residence), US (Nationality)
Inventor(s):
NICHOLS Walter A, 9608 Summercliff Court, Chesterfield, VA 23832, US,
SPRINKEL F Murphy Jr, 11017 Cedar Lane, Glen Allen, VA 23059, US,
Legal Representative:
SKIFF Peter K (et al) (agent), Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404, US,
Patent and Priority Information (Country, Number, Date):

Patent: WO 200251466 A2-A3 20020704 (WO 0251466)
Application: WO 2001US44809 20011130 (PCT/WO US0144809)
Priority Application: US 2000742321 20001222
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 4313
English Abstract

A disposable aerosol generator (120) for use with an inhaler device (100) which includes a heater (130) adapted to volatilize fluid stored in the disposable aerosol generator (120) and method of using the inhaler (100). The disposable body includes a sealed chamber (10) and an outlet (20), the chamber (10) being located between first (14) and second (18) layers of material. The chamber (10) holds a predetermined volume of a fluid which is expelled through the outlet (20) when the fluid in the chamber (10) is volatilized by the heater (130). The disposable body can include a series of spaced apart aerosol generators (120), each of which can be advanced to a release position at which the heater (130) can heat one of the fluid containing chambers (10). Prior to heating the fluid, the outlet (20) can be formed by severing the first (14) and/or second (18) layer with a piercing element (152) and the volatilized fluid can be expelled from the outlet (20) into a passage of a dispensing member (140).

Main International Patent Class: **A61M-016/00**
Fulltext Availability:
Detailed Description
Claims
Detailed Description
... resistant to heating.
For example, in the embodiment shown in Figs 1 and 2, the **chamber** 10 is formed as a recess 12 in an injection molded body 14 of polymer material and a **flow passage** 30 comprises a channel 16 in the body 14, the channel 16 extending from 2 5 the recess 12. The **chamber** 10 is sealed by a layer 18 such as aluminum foil **heat** sealed to the plastic body 14. In order to provide multiple doses of medicated fluid...
...fluid contained therein. Outlet 20 is preferably a small aperture at the end of the **flow passage** 30, the outlet being initially closed to the atmosphere. The **flow passage** 30 can have any suitable size which is effective to expel the vaporized fluid into the atmosphere and form the aerosol of desired particle size. For instance, **flow passage** 30 can have an inside diameter of about 0.05 to about 0.60 millimeter...
...2 mm and a length of about 100 to 200 times the inside diameter. The **chamber** 10 can have any desired size such as a size suitable 0 to deliver a...of heating members arranged to heat the fluid in the chamber and/or along the **flow passage** . Also, the fluid in the **chamber** could be expelled 2 5 mechanically, e.g., by a member which pushes the fluid into the **flow passage** and a **heater** along the **flow passage** can be used to volatilize the fluid and expel the vaporized fluid out of the...
...FIG. 5 includes a heating element 132a
configured to completely cover the chamber 10 and **flow passage** 30.

With the 2 5 **heater** element pattern shown in FIG. 5, greater **heating** can be achieved in the **flow passage** 30 due to the -smaller cross sectional area of the **heating** element along the **flow passage** . The **heater** 132b shown in FIG. 6 includes a **heating** element 132b configured as a sinusoidally shaped strip which overlies **chamber** 10 and a rectilinear strip which overlies the **flow passage** 20.
In operation, the disposable cartridge 1 10 can be loaded into the inhaler 100...
Claim
... The inhaler device according to Claim 16, wherein the disposable 1 0 body includes a **flow passage** extending rectilinearly from the **chamber** , the **heater** including a first portion arranged to **heat** the **chamber** and a second portion arranged to **heat** the **flow passage** , the first and second portions of the **heater** comprising a layer of resistance **heating** material configured such that the second portion of the **heater** becomes hotter than the first portion of the **heater** during actuation of the **heater** to volatilize the fluid in the **chamber** .
21 A method of forming an aerosol using the inhaler device according to Claim 10...the outlet.
24 The method according to Claim 23, wherein the disposable body includes a **flow passage** extending rectilinearly from the **chamber** , the **heater** including a first portion arranged to **heat** the **chamber** and a second portion arranged to **heat** the **flow passage** , the first and second portions of the **heater** comprising a layer of resistance **heating** material configured such that the second portion of the **heater** becomes hotter than the first portion of the **heater** during volatilization of the fluid in the **chamber** .

21/3,AB,K/13 (Item 13 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.
00558225
AEROSOL GENERATOR **AND METHODS OF MAKING AND USING AN** AEROSOL GENERATOR
ATOMISEUR ET PROCEDES DE FABRICATION ET D'UTILISATION D'UN ATOMISEUR
Patent Applicant/Assignee:
PHILIP MORRIS PRODUCTS INC,
Inventor(s):
COX Kenneth A,
BEANE Timothy Paul,
SWEENEY William R,
NICHOLS Walter A,
SPRINKEL F Murphy Jr,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200021598 A1 20000420 (WO 0021598)
Application: WO 99US24080 19991014 (PCT/WO US9924080)
Priority Application: US 98172023 19981014
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 14662
English Abstract
An aerosol generator (21) includes a **flow passage** (27) having an

inlet (29), and an outlet (31); a **heater** (33) arranged relative to the **flow passage** for **heating** the **flow passage**, a source of material (37) to be volatilized in communication with the inlet of the **flow passage**; a valve (35) to open, and close communication between the source of material; the inlet of the **flow passage**; and a pressurization arrangement (39) for causing material in the source of material to be introduced into the **flow passage** when the valve is in an open position. The aerosol generator further includes a source of power (41) for operating the **heater**, the valve; and a control device (43) for controlling supply of power from the source of power to the **heater**, and the valve. A metering device (463) in an inhaler (401) includes a pressurized source of medicated fluid (408), and a metering **chamber** (407) configured to deliver a predetermined volume of fluid to a **heated flow passage** (409) in the inhaler.

Main International Patent Class: **A61M-016/00**

Fulltext Availability:
Detailed Description
Claims

Detailed Description

... The metering chamber is configured to deliver a predetermined volume of fluid to a heated **flow passage** in an inhaler.

In accordance with one embodiment of the metering device, the metering chamber...

...with another aspect of the invention, the inhaler preferably includes an aerosol generator wherein a **flow passage** has an inlet and an outlet and a pressurized source of fluid, a **heater** is arranged relative to the **flow passage** for **heating** at least a portion of the **flow passage**; and a metering **chamber** is in fluid communication with the pressurized source of fluid and is configured to deliver a predetermined volume to the **flow passage**.

In accordance with another aspect of the invention, a method of dispensing a predetermined volume...

...a predetermined volume of the fluid is ejected from the metering chamber into a heated **flow passage**.

5

Brief Description of the Drawings

The features and advantages of the present invention are...rotary valve 405 is located between a pressurized source of fluid 408 and a heated **flow passage** comprising a tube 409 in which the fluid is volatilized to produce an aerosol for inhalation by a user. The tube 409 can be **heated** by any suitable arrangement. For example, a power source 411 and electrical connections 413 for **heating** the tube 409 via a **heater** (not shown) are also shown schematically in FIG. 7.

In this example the metering chamber...predetermined volume, loads a predetermined volume and triggers the heating mechanism to heat the attached **flow passage**.

As mentioned in the embodiment described in FIG. 7, it is desirable to maintain a...predetermined volume of the fluid can be urged through the delivery passage into a heated **flow passage** of an inhaler which ejects the volatilized fluid to fonn an aerosol spray. The volume...

Claim

... 1, further comprising a source of a second material in liquid form communicating with the **flow passage** at a point before the **heater**, the pressurization arrangement causing material in the source of second material to be introduced into the **flow passage** from the source of material when the valve is in an

open position, the source...
...source of second material including a second flexible container, the pressurization arrangement including a first 1chamber in which the first flexible container is disposed, and a first pressurized gas sealed in the first **chamber** and surrounding the first flexible container, and a second 33 **chamber** in which the second flexible container is disposed, and a second pressurized gas sealed in the second **chamber** and surrounding the second flexible container, the first pressurized gas and the second pressurized gas...
...in an open position, and
wherein the source of power supplies power to the second **heater** and the second valve, and the control device controls supply of power from the source of power to the second **heater** and the second valve, the aerosol generator optionally further comprising a **chamber** , the outlets of the **flow passages** being disposed in the **chamber** proximate each other, the **chamber** being of sufficient size and configuration to permit mixture of volatilized materials that expand out...
...second component being attachable and detachable to the first component, the first component including the **flow passage** , the **heater** , the valve, the source of material, and the pressurization arrangement, and the second component including...
...device which detects when a
predetermined air flow rate exists proximate the outlet of the **flow passage** , the air flow detecting device being arranged to send a signal to the controller to...
...being arranged to control the power source to supply power to the valve and the **heater** in response to the signal from the air flow detecting device wherein the air flow detecting device is optionally permanently **attached** to the second component, the aerosol generator optionally including a mouthpiece section forming part of...
...first component, the 35
mouthpiece section having an open end and the outlet of the **flow passage** being disposed inside of the mouthpiece section at a distance from the open end wherein the mouthpiece section optionally has a plurality of vent holes wherein the outlet of the **flow passage** is optionally disposed in the mouthpiece section between the vent holes and the open end...
...detecting device which detects when a predetermined pressure drop occurs proximate the outlet of the **flow passage** , the pressure drop detecting device being arranged to send a signal to the controller to arranged to control the power source to supply power to the valve and the **heater** in response to the signal from the pressure drop detecting device.
18 The aerosol generator...
...in an open position, and
wherein the source of power supplies power to the second **heater** and the second valve, and the control device controls supply of power from the source of power to the second **heater** and the second valve.
36
. The aerosol generator as set forth in claim 18, further comprising a **chamber** , the outlets of the **flow passages** being disposed in the **chamber** proximate each other, the **chamber** being of sufficient size and configuration to permit mixture of volatilized materials that expand out...
...24 The method as set forth in claim 20, further comprising arranging the heater, the **flow passage** , the valve, the source of material, and the pressurization arrangement to form a first component, arranging the source of power and the control device to form a second component, and

removably attaching the second component to the first component.
25 A method of generating an aerosol, comprising...a metering chamber in fluid communication with the
pressurized source of fluid and a heated **flow passage** , the method comprising:
filling the metering **chamber** with fluid from the pressurized source; and
activating a displacement member to eject a predetermined volume of fluid from the metering **chamber** into the **heated flow passage** .
44 The method of claim 43, wherein the metering chamber comprises a bore in a...

28/6/3 (Item 3 from file: 349)
00431705 **Image available**
INSULIN DELIVERY ENHANCED BY COACHED BREATHING

30/6/1 (Item 1 from file: 349)
00982494 **Image available**
METHOD AND APPARATUS FOR GENERATING A VOLATILIZED **LIQUID**